Hawaii Longline Observer Program

Observer Field Manual

Pacific Islands Regional Office

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Chapter 1 Introduction

Longline Observer Authority and Goal

The pelagic longline fishery based in Hawaii operates mainly in the Northern Central Pacific Ocean. This fishery is managed through a Fishery Management Plan (FMP) developed by the Western Pacific Regional Fishery Management Council and approved by the National Marine Fisheries Service (NMFS) under the authority of the Magnuson-Stevens Fishery Conservation and Management Act. The NMFS has determined in its Biological Opinion issued in November 2002 through the Endangered Species Act (ESA) that the Hawaii based pelagic longline fishery is likely to adversely affect Leatherback, Loggerhead, Olive Ridley, Green and Hawksbill sea turtles.

Another species of concern is the Hawaiian population of False killer whales, *Pseudorca crassidens*. Research done in late 2003 indicates the need for more information to assess the impact of the fishery on the species.

Vessels registered with Hawaii Longline Limited Access permits are required to carry observers, when directed to do so by the NMFS to document the incidental capture of sea turtles. The data are used to verify turtle takes as well as seabird and marine mammal interactions in the fishery. Other data on the fishery are collected to support research undertaken by fisheries scientists at the Pacific Islands Fishery Science Center (PIFSC). The research is directed at several different issues such as; understanding the basic biology of the species encountered, identifying factors that influence the bycatch rates of selected species, and the economic factors that affect fishing behavior for example.

Objectives for Longline Fishery Observers

To meet NMFS field responsibilities, the following objectives are established for scientific technicians working as observers aboard longline fishing vessels:

Obtain reliable information about the incidental interaction of sea turtles.
Record fishing effort
Document interactions of other protected species (marine mammals & seabirds)
Record the number of fishes kept and discarded
Collect biological information from selected species.

Guidelines

With ***SAFETY*** and ***INTEGRITY*** as the watchwords of your job, it is of primary importance that you conscientiously follow the guidelines outlined below:

It is your responsibility to observe and accurately record biological research data as instructed. Everything you record is available to the vessel operator or his designate and is subject to legal interpretation. Almost everything you record may be made available as public information. You are not to record extemporaneous comments or personal opinions. It is not your job to evaluate or interpret data, simply record your observations on the data forms that you are issued.

It is your responsibility to maintain open communication with the vessel operator and other vessel personnel to facilitate a clear understanding as to what data are being collected.

It is your responsibility to advise the vessel operator of all data items recorded. If he or she is in disagreement with you, allow operators to record their views on the original data forms. If they so choose, the vessel operators may record their own comments on these forms.

You are hired to be an observer, *not an enforcement agent*. You are not empowered to write citations, make arrests, or carry out enforcement activities. Your responsibilities require you to make observations and collect data, some of which pertain to federal regulations. There is no guarantee that your data will not be used as evidence to assess penalties. Government attorneys perform legal interpretation.

Your responsibility of observing and recording data is to be performed in such a manner as to minimize interference with fishing operations. Likewise, the vessel operator and any other vessel personnel are not to interfere with your duties.

Responsibilities

Sea-assignment readiness is determined by personal fitness, training preparation and staff assessments.

Alcohol dependency and other illicit drug use are incompatible with observer duties and are not tolerated. If detected, disciplinary action will be initiated.

Observers should not keep personal diaries during a cruise assignment. This does not include materials issued to you for documentation purposes.

Because observer objectives are mandated by federal regulations, personal research is prohibited aboard vessel assignments.

Retaining specimens (especially “edible” specimens) of any kind for any personal reason is prohibited.

Intentionally entering the water from an assigned vessel is prohibited; such activity will compromise personal safety and data collection duties.

Observers do not choose vessel assignments; however **observers have the right to refuse deployment on a vessel they perceive as unsafe.** Management selects sea assignments through a predetermined sampling plan and confirms that the boats meet minimum U.S. Coast Guard safety requirements. Any refusal to board a vessel after an inspection must be documented and discussed with management to determine the appropriate course of action. Fishing activity dictates vessel departures and arrivals. Since vessel notification requirements may limit response time, observers should be prepared for sudden sea assignments of extended and uncertain duration.

An observer's vessel assignment (trip) continues until the vessel returns to port to unload its catch. Occasionally, the port of arrival will be different than the port of departure. In these instances, the trip is considered completed when the vessel arrives in port to offload its catch. If you are directed by the PIRO Observer Program (or a designated authority) to remain on the vessel and observe the subsequent fishing trip do not use the same trip number. Contact the PIRO Observer Programs office in Honolulu or your contractor for the trip number to use.

Never leave your assigned vessel prematurely without approval from the PIR Observer Program Coordinator, Port Coordinator, or acting designate; **to do so is grounds for dismissal.**

Safeguard the return of your data to the port field station. Your work is a valuable investment; treat it like your wallet. **Data loss may be grounds for dismissal.**

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Chapter 2 Summary of Duties

Employment Purpose

When aboard an assigned longline vessel, observers collect objective and accurate data on the following:

Vessel fishing gear characteristics and operations,
Species composition of the catch,
Incidental catch of protected species, and
Biological (life history), data

General Duties

Work at sea and on shore

Work under the direction of the PIRO Administrator and Operations Coordinator

Collect research and management data from the Hawaii longline fisheries

Work at sea aboard longline fishing vessels

Collect data on vessel activity and fishing operations

Identify protected species, target species, and by-catch species

Record the number and position of protected species, target species, and by-catch species caught during fishing operations or sighted during the cruise.

Tally sea turtles observed during fishing activity

Dissect selected species

Record biological data for sea turtles and other selected marine species

Review collected data and enter data into the database

The Observer's Role

(adapted from an article by P. Cullenberg and K. Rivera in the OTC Quarterly, vol 8, #3)

Since February 1994, observers have played a role in monitoring interactions between the Hawaii based longline fleet and sea turtles in the north-central Pacific. Starting in 2000, the observer's role expanded to cover seabird bycatch in the fishery as well. The observer program has greatly improved the understanding of what the levels of bycatch and interaction are, and what changes can be made in the fishery for the benefit of fishermen and protected species.

When stepping on to a fishing vessel for one day, one week or one month, you the observer are entering a workplace and a home. It is a place where the crewmen have already established a system of communication and responsibilities. An individual observer's ability to deal with the situation is a reflection of the person's flexibility and resiliency. The environment can be lonely, un-welcoming, cramped, and sometimes hostile. Your sleeping and eating habits will definitely be disrupted. The quality of your working relationship with the crew can be more important to the overall nature of the trip than the nature of the vessel itself. A good working situation with the crew makes a good trip. A good working situation on a good boat makes a great trip!

A longline observer's job in Hawaii has two important phases. The first is the initial collection of the data at sea. The second is processing and verifying the data on land. At the end of a trip, you'll begin the debriefing phase. This is where the data you collected are reviewed, first by yourself and secondly by a debriefer. As part of the initial reviews, you may be asked questions on species identification, clarification of notes or comments and possibly to document some information for enforcement issues. After the initial checks, you'll enter the data in the Longline Observer Data System (LODS). Typically the entire debriefing process takes 2-3 days, maybe more after returning from your first trip. It is important no not take the debriefing process personally. Everyone involved wants to make sure the data provided by the observer program are the best as can be.

Some quotes on observing:

"I simply was not prepared to be so cooped up; trapped in such a small place surrounded by cigarette smoke. I hate to sound so dramatic, but this certainly isn't the life for everyone, and I think potential observers need to be aware of this."
–Anonymous, NPGOP observer

"They tell you how hard life at sea is, and the condition you may face, but they never mention how hard of a mental strain it is."
–Anonymous, NPGOP observer

"If you don't like to read, learn to like it. Take the number of books you think you can read, and double it." –Joe Arceneaux, HLOP observer

Before A Vessel Assignment

Placement Meeting

Before each cruise, observers will meet with the vessel operator to review respective responsibilities. The meeting usually will be led by the Port Coordinator, or acting designate. Occasionally, observers may have to conduct their own placement meetings. After the meeting, observers have the responsibility to place their gear aboard their assigned vessels and to be aboard **at least l/2 hour** before the scheduled departure time**.**

- Observers assigned to a vessel should report to their contractor representative each day until their vessel departs.

- An observer's cruise assignment (trip) begins when the vessel leaves port to conduct fishing operations.

During a Vessel Assignment

These lists of do's and don'ts, is the same list that is reviewed with vessel captains during the placement meetings before each cruise.

Observers are to:

1. Collect objective data on fishing activity, the take of target and non-target species and selected specimen samples
2. Perform their duties in a way that minimizes interference with fishing operations.
3. Keep open communication with vessel personnel by informing them about observer duties and collected data.
4. Obtain permission from the vessel captain before using any boat equipment.
5. Collect specimens as instructed by NMFS and clean thoroughly afterward.
6. Use work cameras only for photographing specimens.

7. Bring issued rain gear, boots, life jackets, survival suits and EPIRBS.

8. Ask the captain about emergency procedures and familiarize themselves with the locations of life rafts, fire extinguishers and first aid kits.

9. Remain aboard their vessels until the vessels return to port to unload their catch.

10. Share housekeeping routines such as dishes and general clean up with the crew.

- **Note:** It is incumbent upon observers to maintain his or her personal hygiene. Bathe or shower as allowed, recognizing that fishing vessels are often cramped and freshwater for bathing may be in limited supply.

Observers are not to: Compromise data.

1. Dictate procedures or direct fishing operations.

2. Be involved with crew responsibilities, such as standing watch or helping with fishing.

3. Keep personal diaries in any form.

4. Bring aboard personal recording devices or personal cameras of any type.

5. Compromise data or record extemporaneous or personal comments.

6. Conduct personal research of any kind.

7. Keep specimens or edible fish of any kind.

8. Discuss boat business from one vessel to another or to any fishermen shoreside.

Captains are to:

1. Cooperate with the observer in the performance of the observer's duties.

2. Provide living quarters comparable to a full crewmember.

3. Provide the same meals, snacks and amenities provided to crewmembers

4. Allow the observer access to areas of the vessel necessary to conduct observer duties.

5. Allow the observer access to communications and navigation equipment, as necessary to perform observer duties.

6. Notify the observer when commercial fishing operations are to begin and end.

7. Provide true vessel locations by latitude and longitude upon request by the observer.

8. Bring aboard sea turtles and marine mammals killed during fishing operations that are readily accessible to crewmembers, if requested by the observer.

9. Provide refrigerated bait well storage space for observer collected specimens.

10. Record personal statements on the back of the observer's original forms, if there is disagreement with the observer's collected data.

11. Comply with other guidelines, regulations or conditions that NMFS may provide in writing to ensure the effective use of observers.

Captains are not to:

1. Ask observers to stand watch or help with fishing operations

2. Forcibly assault, harass or sexually harass, intimidate or attempt to influence observers, interfere with or impede observer duties.

3. Fish without an observer onboard the vessel after the owner or agent of the owner has been directed by NMFS to make accommodations for an observer.

Interference and Harassment

- Record in the Hawaii Longline Observer Program Documentation Notebook, any attempt to interfere with you or your observer work, including harassment, by preparing brief, non-inflammatory answers to **Who, What, Where, When, Why, How and How many times.**

- Harassment is defined as conduct which has the purpose or effect of unreasonably interfering with the observer's work performance, or which creates an intimidating, hostile or offensive environment.

- Federal law defines sexual harassment as "any unwelcome conduct of a sexual nature which has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment."

Injuries

- If you are injured while aboard an assigned vessel, record the details in the Hawaii Longline Observer Program Documentation Notebook. Record the time of the occurrence, the type and extent of the injury, how it occurred, what treatment you received, by whom, and the names of any witnesses.

- You may be eligible for compensation under the Federal Employee's Compensation Act (FECA) under an extension of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) o section 403(c).

- The MSFCMA section 403(c) reads as below:
- *"An observer on a vessel and under contract to carry out responsibilities under this Act or the Marine Mammal Protection Act of 1972 (16 USC 1361 et seq.) shall be deemed to be a Federal Employee for purposes of compensation under the Federal Employee Compensation Act (5 UC 8108 et seq.)"*

- If you are an observer working for the NMFS or under contract as above, you are covered under FECA regardless of how long you have worked as an observer or your work schedule, including is you work on a seasonal, part-time, intermittent or contracted basis.

- If you are injured aboard a vessel, you are legally required to notify the captain within seven days of any injury or illness incurred while aboard the vessel.

- Make sure to report any injuries or illnesses incurred during a cruise to your
employer and your debriefer.

    - In order to obtain FECA benefits, you should submit the appropriate FECA claim form within 30 days of the injury. The most common FECA claim forms are:

    - CA-1 *Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation.* Traumatic injuries are defined as a wound or other condition of the body caused by external

force, including stress or strain. Traumatic injuries must be caused by a single specific event or a series of events or incidents within a single day or work shift.

- CA-2 *Notice of Occupational Disease and Claim for Compensation*. Occupational diseases are defined as a condition produced in the work environment over a period longer than one workday or shift. It may result from systemic infections, repeated stress or strain, exposure to toxins, poisons, or fumes, or other work conditions of the work environment.

After a Vessel Assignment

An observer's cruise assignment ends when the vessel returns to port to sell its catch

Observers are accountable for all data, issued equipment, and manuals.

Observer gear should not be left unattended. To avoid being charged for unserviceable gear, return broken and worn out equipment.

- **<u>Loss of data is grounds for dismissal.</u>**

- After each sea assignment, observers are to complete the following forms:

  a. Post-cruise questionnaire and possibly a safety or incident report.
  *At the conclusion of their first trip, each observer will also fill out first trip training critique-questionnaire.

- After a cruise, each observer should ask if there have been changes to the procedures for data editing and entry.

Travel Responsibilities

Always conduct yourself in a courteous and professional manner. When departing from any port other than Honolulu, board your assigned vessel as soon as possible.

Keep your collected data and cameras, in close possession at all times. **Do not check data as baggage. Do not mail originals.**

Remember your data are the result of a significant investment; treat it as you would your wallet; do not entrust it with anyone except observer program staff.

No data is better than bad data!

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Chapter 3 Data Collection Instructions

General Instructions

If the information requested on a data collection form is not available or not applicable, leave the data field or code box blank. Describe the situation in the Documentation Notebook. (Use the Documentation Notebook to describe any situations during the trip that you feel should be recorded when there is no form or designated area for the particular situation.)

1. Use a soft (No. 2) pencil on all forms. Line out any errors, and write the correct data above the struck item. **Do Not** try to make changes over a number that is already recorded.

2. Print legibly.

3. Observe and accurately record descriptive and quantitative data with explicit notes and explanations. **Record data as events occur**, trust nothing to memory.

4. Record times as four digits using the 24-hour clock, for example, 5:30 P.M. is written as 1730, but 5:30 A.M. is written as 0530. Use Hawaii Standard Time.

5. Protected species are top priority. Never allow collection of secondary data to interfere with the collection of protected species data.

6. If data are not available in the proper units, write the measurement and units in the margin or comments section for later conversion, for example, meters from fathoms.

7. If additional space is required on a data form, continue data entries on additional forms.

8. Include all pertinent facts when writing notes or narrative explanations.
Remember that people who were not present will read about this event(s) you are describing.
Don't assume that the readers will automatically *know* what you are describing if you did not write it down.

Data Collection Priorities

As an observer in the Hawaii longline fishery your primary duty is to obtain reliable information about sea turtle and other protected species interactions. Therefore, a data collection hierarchy has been established and is described below. Observers are expected to know what to accomplish first. If work is interrupted or curtailed, this will help prioritize tasks.

Process animals in the following order of priority:

- Sea turtles
- Seabirds
- Marine Mammals
- Billfish
- Sharks
- Tunas

Sample and Data Collection Priorities

Samples

- Sea turtles, skin biopsies or whole dead animals

- Seabirds, whole - leave any leg bands present on the bird

- Marine mammal skin biopsies

- Selected biological samples from fish, as directed - see Circular Updates.

Data

- Collect & document data from all incidental catches and interactions of protected species. Sea turtles have the highest priority. Seabirds are second, and marine mammals are third.

- Record species composition and disposition of the catch.

- Record fishing locations and gear characteristics.

- Collect fish & shark measurements.

- Describe all incidents where tags are applied, observed, or removed on any caught

animal.

Sample Collection General Comments

Make collections only if you have the proper storage medium & space.

Specimen Collection Protocol

Refer to the appropriate Circular Update packet and the collection protocols in the Appendix of this field manual.

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Chapter 4 Trip Specifications Record

Introduction

The **T**rip **S**pecifications **R**ecord is used to record the specifics of the fishing trip. It is the only record of the vessel name, permit number and the name of the operator. When separated from other observer data, the data cannot easily be associated with a specific vessel or operator. This form is completed only once for each observed fishing trip.

General Instructions

Most of the information that is recorded can be obtained by direct observation and measurement. However, specifics about some vessel equipment can be obtained by asking the operator. This form can be completed throughout the trip to allow the observer ample time to ascertain the information.

Data Elements

Observer ID - in the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Declared Trip Type – the type of set the vessel will make on this trip. The Port Coordinator will tell you what type of setting the vessel will employ during the cruise. Write in the appropriate letter code in the box. There are only two types of sets, Deep Sets or Shallow Sets. If the set type is *Deep Set*, then enter **D** in the box. If the set type is *Shallow Set*, then enter **S** in the box.

If the vessel did not declare the type of set they will fish when they called in, enter **N** for *Non-declared*. Do not change the Declared Trip Type, if the type of gear configuration ("set type") fished during the trip is different from what was declared before the start of the trip. This box must be filled in, it cannot be left blank.

Trip Number - in the upper right corner, enter the unique six-character number assigned by the Operations Coordinator. In the first two blocks enter **LL** for longline. Starting in the third block, enter the four-digit number.

Manual Version – in the upper right corner of the form, fill in the spaces with the Manual Version number. It can be located on the title page of the manual. The first

two characters are **LM** for longline manual.

Documentation Number - the 6 to 7-digit number (is) assigned to the vessel by the US Coast Guard. It is painted on the sides of the pilothouse, the stern and both sides of the bow. Right justify this number and do not put in any leading zeros.

Vessel Name - print in block letters the name of the vessel as it appears on the bow, transom or official records. It is not necessary to precede the vessel name with F/V "fishing vessel."

Vessel Length - the overall length of the vessel in feet. This value can be retrieved by the debriefers from the USCG if you can not find the correct documented vessel length.

Operator Name - print in block letters the first name, middle initial and last name of the person responsible for operation of the vessel. Confirm the spelling of names you may be unfamiliar with. If the operator has no middle name, then write "(NMI)" for ***N**o **M**iddle **I**nitial,* after the operator's first name.

Departure Date - the date the vessel first departed for the fishing area. Use two digits for the day. Write the first three letters of the month (*ex.* JAN, FEB, MAR). In the last two spaces, write in two digits representing the year. Example; August 15, 2003 would be recorded as 15 AUG 2003.

Time - the time that the vessel first departed for the fishing area. Use Hawaii Standard Time and the 24-hour clock.

Port of Departure - print in block letters the name of the port city the vessel departed from, e.g., Honolulu.

Intermediate Port Stops - occasionally, some trips will include port stops for reasons other than to unload the catch. If your assigned vessel makes a port stop, complete the required lines in the section. Sometimes a vessel will leave from the pier to tie up in another part of the port to take on ice, bait or other supplies. These stops should not be considered port stops. As a rule a stop is considered a port stop if the vessel has been out of the harbor for more than 30 minutes before returning. If no port stops are made, draw a diagonal line through this section.

Stop Number - record a single digit indicating the number of the port stop starting with **1**.

Port Stop Date - the date the vessel returned to any port for any reason other than the end of the trip. Use the standard date format (*ex.* 24 JUL 2003).

Time - the time that the vessel returned to port for any reason other than the end of the trip. Use Hawaii Standard Time and the 24-hour clock with two digits for the hour

and two digits for the minutes.

Date Cruise Resumed - the date that the vessel departed port after Port Stop 1 to resume fishing.

Time - the time that the vessel departed port after Stop 1 to resume fishing.

Arrival Date - the date the vessel returns to port after completing the fishing trip.

Time -the time that the vessel returns to port after completing the fishing trip.

Port of Arrival - print in block letters the name of the port city the vessel returned to, *ex.* Honolulu or San Pedro, CA.

Comments - use this section to explain details of port stops or to record information not included in the data boxes. This section should also be used to record any specimens that are brought back but do not go on the catch event log. Examples of these types of specimens are lobster phyllosoma and a seabird that dies on deck but was not brought up on gear.

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Chapter 5 Longline Set & Haul Information

Introduction

The **L**ongline **S**et and **H**aul **D**ata form is used to record the basic set and haul parameters of longline sets on observed trips.

General Instructions

The information necessary to complete this form is obtained through direct observation. If the information for any data elements is not available or applicable, leave the field(s) blank and describe the situation with notes on the back of the form. If additional space is needed for notes, use extra paper.

The incidental take of protected species is extremely important to the management of this fishery. **Observers must observe the entire haul back (gear retrieval process).**

Data Elements

Form Header

Observer ID - in the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number - in the upper right corner, the unique six-digit number assigned by the Operations Coordinator. In the first two blocks enter **LL** for longline. After the second block, enter the four digit number.

Set Number - sets are numbered consecutively for each observed trip beginning with 01.

Log Book Page Number - record the page number from the *NMFS W. Pacific Daily Longline Fishing Log* that the captain uses to report the catch for this set. **Note:** Right justify and do not use leading zeros.

Set Information Block

Begin Set

Date - the date when the setting operations start (the first piece of gear goes into the water.) Use the standard date format

Time – record the exact time when the setting operations start. **DO NOT** round the time to the nearest 5,10 or 15 minute mark. Record times using the 24-hour clock and use Hawaii Standard Time.

Latitude - the latitude of the vessel at the beginning of the setting operation. Enter *Degrees, Minutes and Tenths of Minutes*. Obtain positions from the GPS unit on the vessel. Enter **N** in the trailing block for the Northern Hemisphere, and **S** for the Southern Hemisphere. (*ex.* 21° 18.3 N) **DO NOT** record positions from the captain's logbook.

Longitude - the longitude of the vessel at the beginning of the setting operation. Enter *Degrees, Minutes and Tenths of Minutes*. Obtain positions from the GPS unit on the vessel. Enter **E** in the trailing block to indicate East longitude and **W** for West longitude. (*ex.* 157° 55.3 W) **DO NOT** record positions from the captain's logbook.

Weather Code - record the two digit number representing the weather conditions at the beginning of the setting procedure.

Beaufort - record the Beaufort Scale number 0 - 10 describing sea conditions at the beginning of setting operation. A wind of a given speed blowing for a sufficient time over a sufficient surface area of water (fetch) produces a characteristic appearance of the sea's surface. The Beaufort Scale describes the characteristic appearance of the sea associated with each numerical level of the Scale. Refer to the reference tables in your manual and on the bottom of the form.

In-situ Surface Temperature – Record the sea surface temperature as a 3 digit number in the Fahrenheit scale to the nearest 0.1 degree. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued back-up thermometer.

When using a back-up thermometer, follow these steps. Cast the water collecting container overboard into water which is least affected by external heating from the vessel. Capture enough water to fill the well and insert the thermometer. Allow time for the thermometer to equilibrate before recording the temperature, roughly 10 seconds.

End Set

Date - the date when the setting operations ended (the last piece of gear was put into the water). Use the standard date format.

Time - record the exact time when the setting operations ended. **DO NOT** round the time to the nearest 5,10 or 15 minute mark. Record times using the 24 hour clock and use Hawaii Standard Time.

Latitude - the latitude of the vessel at the beginning of the setting operation. Enter *Degrees, Minutes and Tenths of Minutes*. Obtain positions from the GPS unit on the vessel. Enter **N** in the trailing block for the Northern Hemisphere, and **S** for the Southern Hemisphere. (*ex.* 21° 18.3 N) **DO NOT** record positions from the captain's logbook.

Longitude - the longitude of the vessel at the beginning of the setting operation. Enter *Degrees, Minutes and Tenths of Minutes*. Obtain positions from the GPS unit on the vessel. Enter **E** in the trailing block to indicate East longitude and **W** for West longitude. (*ex.* 157° 55.3 W) **DO NOT** record positions from the captain's logbook.

Weather Code - record the two digit number representing the weather conditions at the end of the setting procedure.

Beaufort - record the Beaufort Scale number 0 - 10 describing sea conditions at the end of setting operation. Refer to the reference tables in your manual and at the bottom of the form.

In-situ Surface Temperature – Record the sea surface temperature as a 3 digit number in the Fahrenheit scale to the nearest 0.1 degree. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued back-up thermometer.

Haul Information Block

Begin Haul

Date - the date when the haul back operation is begun (the first piece of gear was pulled out of the water). This is almost always a radio buoy, and is considered *Float no. 1* for counting purposed on the catch record. Use the standard date format.

Time - record the exact time when the haul back operation is begun. **DO NOT** round the time to the nearest 5,10 or 15 minute mark. Record times using the 24 hour clock and use Hawaii Standard Time.

Latitude - the latitude of the vessel at the beginning of the setting operation. Enter *Degrees, Minutes and Tenths of Minutes*. Obtain positions from the GPS unit on the vessel. Enter **N** in the trailing block for the Northern Hemisphere, and **S** for the Southern Hemisphere. (*ex.* 21° 18.3 N) **DO NOT** record positions from the captain's logbook.

Longitude - the longitude of the vessel at the beginning of the setting operation. Enter *Degrees, Minutes and Tenths of Minutes*. Obtain positions from the GPS unit on the vessel. Enter **E** in the trailing block to indicate East longitude and **W** for West longitude. (*ex.* 157° 55.3 W) **DO NOT** record positions from the captain's logbook.

Weather Code - record the two digit number representing the weather conditions at the beginning of the haul back procedure.

Beaufort - record the Beaufort Scale number 0 - 10 describing sea conditions at the beginning of haul back operation. Refer to the reference tables in your manual and on the front of the form.

In-situ Surface Temperature – Record the sea surface temperature as a 3 digit number in the Fahrenheit scale to the nearest 0.1 degree. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued back-up thermometer.

End Haul

Date - the date when the haul back operation is ended (the last piece of gear was pulled out of the water). Use the standard date format.

Time - record the exact time when the haul back operation is ended. **DO NOT** round the time to the nearest 5,10 or 15 minute mark. Record times using the 24 hour clock and use Hawaii Standard Time.

Latitude - the latitude of the vessel at the beginning of the setting operation. Enter *Degrees, Minutes and Tenths of Minutes*. Obtain positions from the GPS unit on the vessel. Enter **N** in the trailing block for the Northern Hemisphere, and **S** for the Southern Hemisphere. (*ex.* 21° 18.3 N) **DO NOT** record positions from the captain's logbook.

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Weather Code - record the two digit number representing the weather conditions at the end of the haul back procedure.

Beaufort - record the Beaufort Scale number 0 - 10 describing sea conditions at the end of haul back operation. Refer to the reference tables in your manual and on the bottom of the form.

In-situ Surface Temperature – Record the sea surface temperature as a 3 digit number in the Fahrenheit scale to the nearest 0.1 degree. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued back-up thermometer.

Set / Haul Events

Haul Back Direction Code - enter the appropriate two digit code to indicate which end the gear was hauled. If the haul back commences more than five (5) floats from an end, select 03. Other, and describe the float number and situation in the Comments section.

Line Parted? - place a check or X in the box if the mainline unintentionally parted while the gear was hauled.

Number Section Retrieved - if the mainline parts, enter the number of pieces that were hauled back. For example, if the mainline parts one time, then you would enter 02 to indicate that two sections of mainline were hauled back. If the line parts 2 times record 03 in the number of sections hauled back. It is always one more section hauled back than the number of times the mainline parted.

Set Interaction? - Place a check or X in the box if you observed a protected species interaction or entanglement during the setting operations. Be sure to document the interaction in the Protected Species Event Log.

Haul Interaction? - Place a check or X in the box if there was a protected species interaction with the gear during the haul back. If you observe a protected species get hooked during hauling operations, or have a protected species come up in the gear place a check or X in the box. If there was an interaction, make sure to record the details in the Protected Species Event Log.

Comments - Use this section to describe any particulars that could not be codified from the available data element choices. If any data elements were left blank, record what was left blank and why the information could not be collected, in this section. If you run out of room, indicate that there are notes on the back, and continue on the back of the form.

Weather Code Table

00 Not determined	06 Rain
01 Clear	07 Thunderstorms
02 Partly Cloudy	08 Rain & Fog
03 Cloudy (one or more layers)	09 Fog/Thick Haze
04 Drizzle	10 Snow, or rain/snow mix
05 Showers	99 Other

Beaufort Chart

Sea Surface State	Beaufort	Wind Speeds	Wave Height
Surface is like a mirror.	0	Calm	0 ft
Ripples with the appearance of scales, no foam.	1	1-3 kts	¼ ft
Small wavelets, glassy crests, not breaking.	2	4-6 kts	½ ft
Large wavelets, crests break, some scattered whitecaps.	3	7-10 kts	2 ft
Small waves, becoming longer, numerous white caps.	4	11-16 kts	4 ft
Moderate waves, longer form, many white caps, some spray.	5	17-21 kts	6 ft
Larger waves forming, whitecaps everywhere, more spray.	6	22-27 kts	10 ft
Sea heaps up, white foam from breaking waves blown into streaks.	7	28-33 kts	14 ft
Moderately high waves of greater length, edges of crests break into spindrift, foam is blown in well marked streaks.	8	34-40 kts	18 ft
High waves, rolling starts, Foam in dense streaks spray may reduce visibility.	9	41-47 kts	23 ft
Very high waves with over hanging crests, sea takes on white appearance, foam is blown in dense streaks obscuring visibility, heavy rolling.	10	48-55 kts	29 ft

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Chapter 6 Gear Configuration

Introduction

The **G**ear **C**onfiguration form is a record of longline fishing gear characteristics. The data on this form are used to describe specific parts of the gear. Vessels may occasionally change or alter their gear according to local conditions. This data can be used with other observer collected data elements to determine the affects on the catch of protected species as well as target species.

General Instructions

This form should be filled out before fishing operations begin. Most of these elements are obtained thorough direct observation or measurement by the observer. There are a few elements with "Reported" in their name. To obtain the values of the *Reported values*, ask the captain, crew or check the packaging labels. A form needs to be completed for each day fished, even if nothing changes.

Data Elements

Observer ID: In the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: Record the number of the cruise assigned by port coordinator.

Set Number: Record the number of the set.

Hooks & Floats Block:

Number of Floats: Record the number of floats used on this set to suspend the gear in the water column. Radio buoys are considered floats and counted the same as the other floats. Occasionally some crews will connect 2-3 floats together. In these cases, all the connected floats would be counted as one.

Hook Type: Select the appropriate code indicating the predominant style of hook used in this configuration. Use the hook reference chart (handed out during class) to determine size and style of hook. If the code is 06. Other, describe the hook in the Comments section. If possible, ask for a hook as an example. If more than one hook style is used, record the predominant style and describe all of the hook types used and approximate amounts or percentages in the Comments section.

►**How to determine if a hook is offset**. Place the hook so that just the eye is over the edge of a table or other similar flat surface. If the hook, under its own weight, does not lay with the point in line with the shank, it is offset. Offset hooks won't lay flat. Refer to the Hook Size Chart handed out in class.

Hook Size: Record the size number of the hooks used. Ignore "ought" designations. For example a 9/0 hook would be entered as 09. Some hooks (*e.g.* tuna hooks) may have a metric measurement, such as 3.8mm. In that case, disregard the decimal point, and enter the size as 38 in the two boxes.

Hooks/Float: Record the typical number of hooks deployed between the floats. Count several floats (baskets) of gear during the set to find the predominant number. Sometimes the crew puts out hooks inconsistently during the beginning of the set , which is the portion that you are required to observe. If this happens try to get your counts at other times during the set or haul. It is acceptable to collect this during the haul but it is not preferred due to hook loss, tangles, and other higher priority duties.

Number Hooks Set: Count and record the number of hooks deployed on the set. The way to get this number is to count all the hooks/branch lines in the boxes before the setting operations start **each day**. Once the setting is completed, count the remaining hooks/branch lines and subtract from the first count.

Fishing Techniques

Reported Target Depth: Ask the vessel operator how deep he wants the deepest part of the gear to fish. The units for this are meters. If the operator gives you the depth in fathoms, refer to the conversion formulas in the Appendices. (1fm = 1.82m) If you have to convert fm to m, make sure to include this in the Comments section of the form.

Target Species Code: Enter the three-digit code from the Species Code List.

Name: In the box labeled Name, print the English or common name of the target species. Use the names from the Species Code List.

Bait Code: Enter the two-digit code from the list to indicate which bait was used on this set. Small squid (code 02) are 4-7" long calamari sized squid. If the bait code is 05. Mixed, or 06. Other; describe in the Comment section, what the bait was, and approximate amounts or percentages. If you are unsure of what bait type is, take a picture.

Examples: - *Mixed bait, 60/40 sanma-sardines*
- *9 cases sanma, 1 case sm. squid.*

Light Devices Block

Type Code: Enter the two-digit code representing the type of light device, if any, attached to the gear to help catch fish. This does not cover strobes or other lights attached to floats or radio buoys. These lights are used to help locate the gear if the mainline parts. If use code 03, *Other*, describe with notes in the Comments section. If use code 00, *None,* leave the *No. Devices* and *Color Code* elements blank. Some vessels use small glow-in-the dark plastic wedges near the hook on the branch lines to help hold the wire leader loop open. These are not considered light devices and should not be counted as such.

Number of Devices: Record the number of light devices deployed on this set.

Color Code: Record the color light the devices emit. If use code 08, *Mixed*, describe the colors used and approximate percentages on the Comments section of the form.

Mainline Block

Material Code: Select the appropriate code. If the code is 3 (Other), describe the material with notes, and collect a short sample if possible. If the mainline is constructed of 2 or more different materials, record the material code of the majority code in the space provided on the form. Record the other mainline materials (write the names of the materials & the codes) in the comment section of the form.

Diameter: Record the diameter of the mainline to the nearest tenth of a millimeter (0.1mm). Use vernier calipers for this measurement. If the mainline is constructed of 2 or more different materials with different diameters, record the diameter of the longest length of mainline in the space provided on the form. Record the other mainline diameters (write the names of the materials & the codes) in the comment section of the form.

> -*Example:* A vessel has a mainline composed of 2 different types of monofilament line of two different diameters. One piece is 25 miles long and 3.6mm in diameter. The second is 7 miles long and 4.1mm in diameter. In this case you would record the data on the 25 mile piece on the front of the form, and the information on the shorter 7 mile piece in the comment section.

Reported Length: Record the length of mainline actually deployed on this set. Ask the vessel operator for this value. Do not use the GPS plotter or latitude/longitude coordinates to figure out distance between the two ends of the set.
-*Example:* A vessel has 60 miles of mainline on its reel. The captain says he'll set 45 miles. You would record 45 miles as the Reported Length.

Reported Test: The test strength of the mainline material in lbs. Ask the captain or try to determine this from the package. If the mainline is constructed of 2 or more different

materials with different strengths, record the strength (Reported Test) of the longest length of mainline in the space provided on the form. Record the other mainline strengths (write the names of the materials, the codes and the strength) in the comment section of the form.

Number of Strands: Record the number of strands of material the mainline is woven, or braided from. Occasionally a vessel may have several long pieces of mainline tied together. Do not count these pieces to find the number of strands.

Color: Select the appropriate code indicating the color of the mainline. If the code is 9. Other, describe in the Comments section of the form. If the mainline is constructed of different materials of different colors, record the color code of the majority of material in the space provided on the front of the form. Record the other color(s) and percentage in the comments section.

Float line Block

Select examples of typical float lines used on this set. If the floatlines are constructed of 2 or more different materials, record the materials used (write the names of the materials & the codes) in the comment section of the form. There can be some variation. For the measured data elements (length & diameter), measure three typical float lines and take the average.

Material Code: Select the appropriate code. If there are more than 2 materials, select the material code of the majority of the materials. If the material code is 03. Other; describe the material with notes, and collect a short sample if possible. Record all materials used to construct the float line (write the names of the materials & the codes) in the comment section of the form.

Diameter: Record the diameter of the floatline to the nearest tenth of a millimeter (0.1mm). Use vernier calipers for this measurement. If the floatline is constructed of 2 or more different materials with different diameters, record the diameter of the longest length of floatline in the space provided on the form. Record the other floatline diameters (write the names of the materials & the codes) in the comment section of the form.

-*Example:* A vessel is using floatlines composed of 2 different types of materials with different diameters. One section is 18.2m long and 2.0 mm in diameter. The second is 2.2m long and 2.9mm in diameter. In this case you would record the diameter of the 18.2m section on the front of the form, and the information on the shorter 2.2m portion of the floatline in the comments section.

Measured Length: Record the length of the float line to the nearest tenth of a meter. Measure the line from end to end without a float attached to it. If the float line is

constructed of 2 or more materials; measure all of the materials together as a single length. Use the 2m calipers.

Branch Line Block

Select examples of typical branchlines used on this set. If each branchline is constructed of 2 or more types of materials, record the materials (write the names of the materials & the codes) in the comment section of the form. Some variation in the construction of branchlines can be expected. For the measured data elements (length & diameter),measure three typical branchlines and take the average.

Material Code: Select the appropriate code. If there are more than 2 materials, select the material code of the majority of the materials. If the material code is 3. Other; describe the material in the comments section of the form, and collect a short sample if possible. Record information on the others materials used to construct the branch line (write the names of the materials & the codes) in the comment section of the form.

-*example:* if a branch line was made of 4.5m of multi-filament line, and 0.5m of monofilament; you would enter the code of multi-filament on the form. The names and codes for multi-filament & monofilament would be recorded in the comments section.

Diameter: Record the diameter of the branch line to the nearest tenth of a millimeter (0.1mm). Use Vernier calipers for this measurement. If the branch line is constructed of 2 or more materials, record the diameter of the majority material in the space provided on the front of the form. Record the diameters of all other branch line materials in the comments section.

Measured Length: Record the length of the branch line to the nearest tenth of a meter (0.1m). Measure the line from the top of the snap to the leader. If there is a weighted swivel (weight) between the branch line and the leader; measure to the "hook side" of the weight. Measure three typical branchlines and take the average. If the branch line is constructed of 2 or more materials; measure all of the materials together as a single length. Use the 2m calipers to obtain this measurement.

Color: Select the appropriate code indicating the color of the branch line. If the color code is 9 (Other); describe with notes and collect a small sample of possible. If the branch line is constructed of different colors, record the color code of the majority color in the space provided on the front of the form. Record the other colors used to construct the branch line in the comments section of the form.

Reported Test: The breaking strength of the branch line in pounds. Ask the captain or try to determine this from the package. If the branch line is constructed of different materials, record the Reported Test of the majority material in the space provided on the front of the form. Record the Reported Test of the other branch line materials in the comments section of the form.

Leader Material Block

Select examples of typical leaders. If the leaders used are of different materials, record the materials used (write the names of the materials & the codes) on the Comment Log. There can be expected to be some variation. For the measured data elements, measure three typical leaders and take the average.

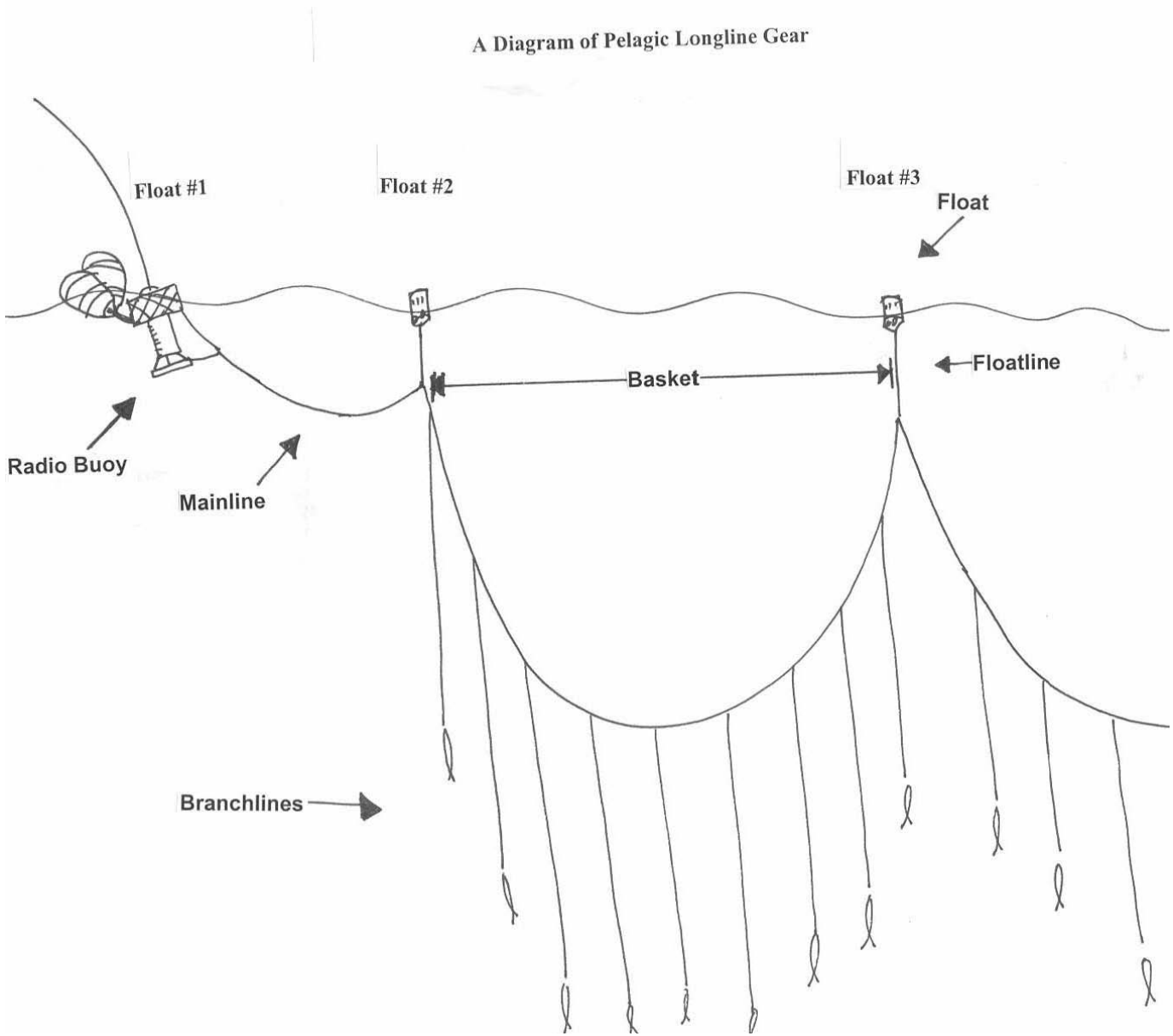
Material Code: Select the appropriate code. If the material code is 3. Other; describe the material in the Comments section of the form, and collect a short sample if possible.

Diameter: Record the diameter of the leader to the nearest tenth of a millimeter. Use Vernier calipers for this measurement.

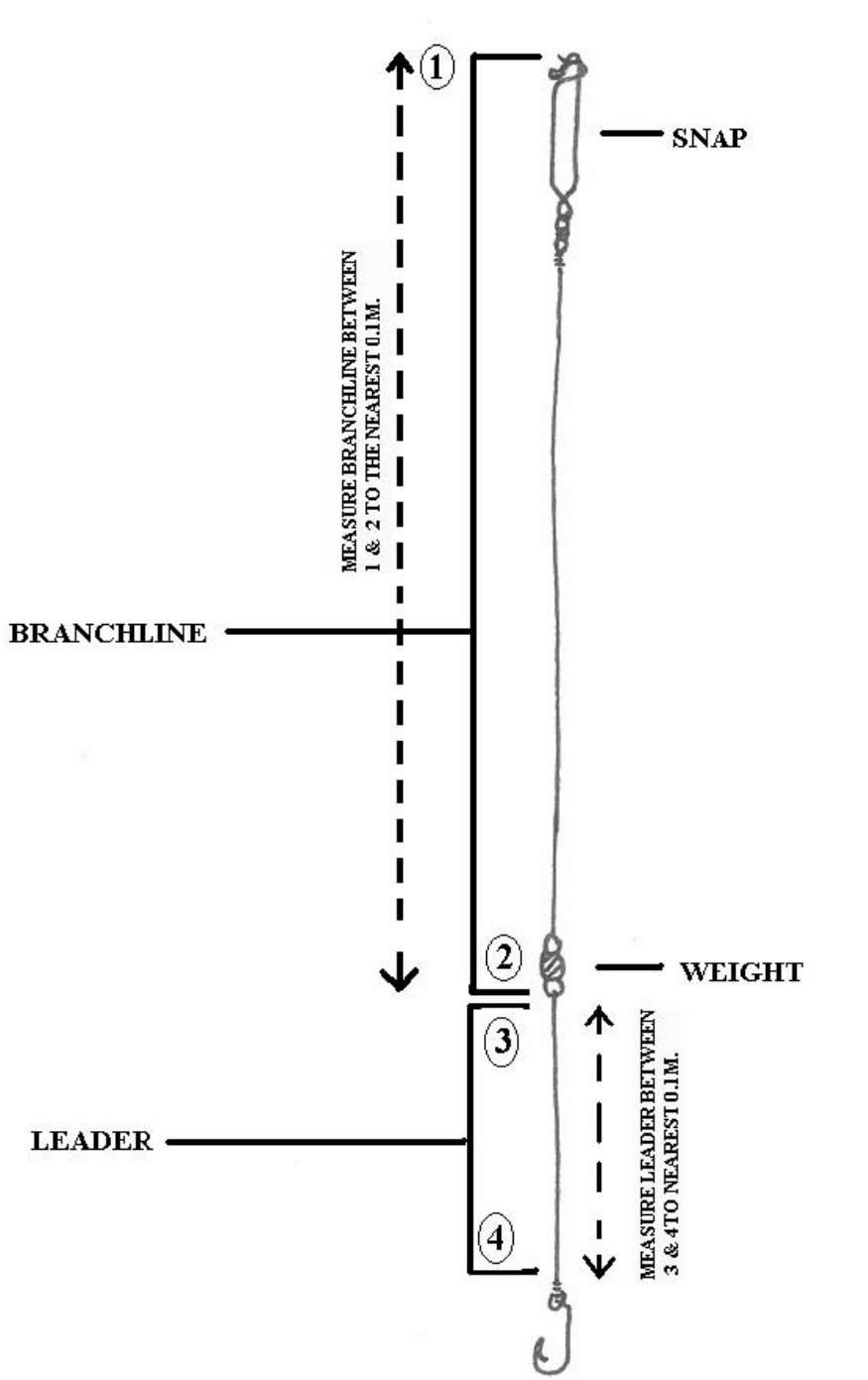
Measured Length: Record the length of the leader to the nearest tenth of a meter. Measure from the eye of the hook to end of the leader, usually to the weight. Measure three typical leaders and take the average.

Reported Test: The breaking strength of the leader material in lbs. Ask the captain or try to determine this form the package.

Weight Size: Record the predominant size of the weights used, in grams. If weights of different size are used, describe the weights used in the Comments section of the form. If the weight size cannot be determined because the weights are old and the size is rubbed off ask the captain if you can bring one back.


A Diagram of Pelagic Longline Gear
Float #1
Float #2
Float #3
Float
Floatline
Basket
Radio Buoy
Mainline
Branchlines

Branchline Diagram



♦Points1 and 2 indicate the points to measure to obtain the branchline length.
♦Points3 and 4 indicate the points to measure to obtain the leader length.
♦The branchline diameter is obtained by measuring the diameter of the line anywhere between the snap and the weight.

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Chapter 7 Protected Species Event Log

Introduction

The **P**rotected **S**pecies **E**vent **L**og is for observers to collect data describing the nature and numbers of protected species observed in association with longline fishing operations. This form provides a means to record data from the three main types of events. They are Approaches, Contacts and Sightings.

For Approaches and Contacts, only use this form when you physically see the event occur (*e.g.* a sea turtle becoming hooked or entangled, or a bird diving on the bait). Sightings can be either by the observer, vessel crew or both.

Approaches: Events where the marine mammals or sea turtles are observed coming closer to the vessel or gear from its initial observation. This does not include sea birds.

Contact: Events where the animal is observed to come into contact with the gear. Contact with bait or catch that is on a hook is considered as a gear contact. Birds that land on floats in the water are considered contact with gear. Birds that land on the boat are not considered contacts. Animals observed becoming hooked or entangled in the gear are considered "catch-contacts" and are counted as "contacts" on this form. Data from these "caught" (catch-contact) animals would then be completed on the Catch Log. If you have a turtle come up on a hook but you did not actually observe it getting hooked then you do not record this on the PSEL; it will be recorded on the catch event log and other pertinent forms.

Behaviors (incl. sightings): Descriptions of marine mammal or sea turtle activity that do not involve contact with the fishing gear.

Special Notice for Short-tailed Albatross Observations

Short-tailed Albatross observations are a high priority.
RECORD ALL SHORT-TAIL SIGHTINGS
NO MATTER WHEN YOU SEE ONE!
If you see one, try to get a photo IMMEDIATELY!

General Instructions

Observations of protected species can be separated into a series of steps based on changes in the behavior or condition of the animal(s). A single event, like an observed hooking could include such steps as:

1. The initial observation & approach (APPROACH).
2. The observed arrival & investigation (BEHAVIOR).
3. The observed contact with the fishing gear (CONTACT).

All steps would have the same overall Event Number, but each step would have a <u>different Event Type Code</u>.

Incidents that are clearly separated by relatively long periods of time should be considered separate events.

This form allows observers to record information from a group of animals or a single individual. A group is defined as an association of animals behaving in a similar or unified manner. Groups may contain several different species of animals engaged in similar behaviors such as a mixed pod of dolphin species traveling as a cohesive group in the same direction.

Sightings: Sightings simply mean you saw a species of animal at a certain place and at a certain time. The term sightings, also implies that the animals, (marine mammals) were not observed in contact with the gear, attempting to steal bait off hooks or preying upon caught fish.

Interactions: Interactions are a specific type of sighting. An interaction means an animal was observed making contact with the fishing gear.

►►►Bait on a hook is considered as part of the fishing gear. Bait that has been removed or fallen from a hook is NOT classified as fishing gear.

●●

Special Notice for Recording Seabird Sighting Data

(These instructions do not cover sea turtle or marine mammal sightings)

<u>During the Set</u>

<u>Seabird Sightings During the Set:</u>
During setting operations, you will observe for seabird interactions for one hour (1 hr) immediately after the start of the set. You will do a scan count for five minutes when they start setting and another one 30 minutes later for 5 minutes. For example, if they start setting at 08:40 then you would do your first scan count at 08:40 and then your

second one at 09:10. A Scan Count is performed by doing a 360º look around the vessel from your observation post to determine the species and number of seabirds. Do not spend more than five minutes scanning for seabirds.
After you've done a scan count for seabirds, you only need to record the following data elements on the PSEL. Do not record positions for scans.

Data for the Scan Counts:

Page No.
Event No.
Date and the start time
Event Type Code (S)
Activity of the vessel
Set No.
Weather code
The species observed and their numbers

If multiple species are observed during the same scan period **each species is recorded on its own line**. All data elements listed above, except date and time, must be filled in for every species observed. The event numbers will be the same for the same scan period. The associations must be filled in if there is more then one line for a scan.

If no birds are seen during a scan count, you still need to record the data. Leave the species code blank. The number of birds will be recorded as "zero" (0). If you see birds after you've completed a scan count, even 1 minute later, do not record them as being observed during the scan count. They weren't there when you did the scan count.

Seabird Interactions During the Set:

All incidents of seabirds observed making contact (incl. becoming hooked or entangled) with the gear should be recorded on the PSEL as completely and as soon as possible. It may be difficult to determine the exact number of birds involved in an interaction. *Try to determine as best you can given the local conditions, an estimate of the numbers of individuals involved in any observed interaction.*

Observed incidents of seabirds making **obvious attempts* (*i.e.* unsuccessful dives on baited hooks) should be recorded on the PSEL as completely as possible. It may be difficult to determine the exact number of birds making attempts. Try to determine as best you can, given the local conditions, an estimate of the numbers of individuals making attempts.
**** Obvious attempt means you saw the object (baited hook, catch or specific part of the gear) that the seabird was trying to prey on during the time of attempt.***
During the setting of the longline, seabirds that are observed injured (hooked or entangled) or killed should be recorded on the PSEL.

Obtaining accurate counts of seabirds involved in interactions with fishing gear may present difficulties to field workers. The NMFS and USFWS are aware of the realities of the situation. The presence or absence of interactions is very important in assessing the efficacy of seabird bycatch mitigation techniques. Even imprecise estimates of the numbers of individuals are useful when documenting the frequency at which seabird interactions occur and any associated time & location factors.

Under ideal circumstances, even experienced field workers attempting to accurately quantify seabird numbers during fishing operations would be hard pressed to capture data as precisely as one might desire.

At times, you may only be able to get the lat/lon coordinates from the GPS receiver after the interaction is over. It is acceptable to record the lat/lon coordinates at the next possible opportunity that does not jeopardize your other duties. When there has been a period of several minutes between the time of the interaction and when you were able to record the lat/lon coordinates, make a note of when you were finally able to record the coordinates in the comments section of the form.

During the Haul

Seabird Sightings During the Haul:

During haulback operations, record seabird sightings by doing a "Scan Count". A "Scan Count" is a census of seabirds seen from the vessel during a specified time period at a regulated frequency. You will do a Scan Count once every two hours during the haul. Start at the top of the hour after the haul has started. For example, if a haul starts at 7:55am, you would do your first Scan Count for that haul between 8:00am and 8:05am. The second Scan Count would be performed at 10:00am. If the haul started at 8:10am then you would do your first Scan Count at for that haul at 9:00am.

If for some reason you are not able to perform a Scan Count at the prescribed time, skip it. Make a note in the comments section that the Scan Count was skipped and wait two more hours until the next time you need to do a Scan Count. Do not substitute a scan done at a different time for one you may have missed. In other words **"stick to the plan".**

A Scan Count is performed by doing a 360º look around the vessel from your observation post to determine the species and number of seabirds. Do this during the first five minutes of the hour. Scan Counts can be 1,2,3,4,or 5 minutes long. Do not spend more than five minutes scanning for seabirds.

After you've done a scan count for seabirds, you only need to record the following data elements on the PSEL. Do not record positions for scans.

Data for the Scan Counts:

Page No.
Event No.
Date and the start time
Event Type Code (S)
Activity of the vessel
Set No.
Weather code
The species observed and their numbers

If multiple species are observed during the same scan period **each species is recorded on its own line**. All data elements listed above, except date and time, must be filled in for every species observed. The event numbers will be the same for the same scan period. The associations must be filled in if there is more then one line for a scan.

If no birds are seen during a scan count, you still need to record the data. Leave the species code blank. The number of birds will be recorded as "zero" (0). If you see birds after you've completed a scan count, even 1 minute later, do not record them as being observed during the scan count. They weren't there when you did the scan count.

Seabird Interactions During the Haul:

All incidents of seabirds observed making contact (incl. becoming hooked or entangled) with the gear should be recorded on the PSEL as completely and as soon as possible.

Observed incidents of seabirds making obvious attempts (*i.e.* unsuccessful dives on baited hooks or captured fish) should be recorded on the PSEL as completely as possible.

During longline retrieval, when a protected species is observed becoming hooked or entangled; record the steps up to the hooking/entanglement on a Protected Species Event Log and then the information (re: float & hook nos., and condition information) about the catch/entanglement on the Catch Log and the appropriate biological data form.

Note: If you **did not actually observe** the animal <u>becoming</u> hooked or entangled during gear retrieval, **do not record the information** on this form. In these cases, the data would be entered on the Catch Record and the appropriate biological data form.

Data Elements

Observer ID: In the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: The unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number of the trip.

Protected Species Event Log Page No.: Begin with page 01 and number them consecutively throughout the trip.

Page Number: Enter the page number, as on this Protected Species Page No., for every line that contains data. You may enter the page number on the first line and then draw an arrow down to the last line.

Line Number: This element should be pre-filled.

Event Number: Enter a sequential number for each separate event recorded throughout the trip. The first event observed is numbered 01.

Date/Time: The date and time the event occurred. Use the standard date and time formats (e.g., 24 JUL 2003).

Group/Individual ID: A number to designate the group or individual. If a group splits apart, each sub-group would then be entered onto its own line with a different Group/Indiv. ID. This should **not** be filled in for Scan events.

Event Type Code: Enter the letter code that describes the type of event.

Event Type Code List

B = Behavior
A = Approach.
C = Contact.
S = Scan (scan count)
X = Event ended

B = Behavior is used to signify that the data on that line describes an animal(s) exhibiting a specific pre-defined behavior from the Behavior Code List.

A = Approach is used to signify that the data on that line describes an animal(s) that when first observed was moving towards the vessel or gear. For example; if you see a dolphin bow riding, but did not see it approach the vessel, you would not use A for the Event Type Code. If you did see the

dolphin approach the vessel, and then bow ride, you would use A for the Event Type Code for the line describing the approach, and B for the Event Type Code for the line that described the behavior.

C = Contact is used to signify that the data on that line describes an animal(s) that was observed making contact with the gear. Contact includes hooking, entanglements and simple contacts that do not result in a hooking or entanglement. This Event Type code should only be used if you saw the animal make contact. Animals that are seen only after being hooked or entangled should not be recorded on this form.

S = Scan or Scan Count is used to signify that the data on that line(s) describes seabirds that were sighted during a specifically scheduled observation period. The S Event Type code should not be used to describe seabirds observed attempting to prey on baited hooks, preying on baited hooks or caught fish. S should not be used as the Event Type Code when recording sightings of marine mammals or sea turtles. S is the only event type that should not have an end event X.

X = Event ended. This code is used to signify that an event is completed or your observations of the situation ceased. Every event, except for Scans, will end with an *Event Type Code* of X. After entering X in the Event Type Code Box, no additional information is required for the line except the association codes.

Vessel Activity Code: Record the activity of the vessel at the time of sighting:

Vessel Activity Code List

01 = Gear Retrieval.
02 = Gear Set.
03 = Gear Drift/Soak. Use only if gear is in the water after setting operations are completed and hauling or retrieval operations have not started.
04 = Pre-Set Prep. Crew is preparing the vessel and gear for setting operations.
05 = Post Haul Clean-up. Crew are cleaning up and reorganizing the fishing gear after the last piece of gear is on board.
06 = Running / traveling while the gear is onboard the vessel
07 = Other

Set Number: Record the set number if the vessel activity is setting, soaking, or retrieving. Sets are numbered consecutively for each observed trip beginning with 01. This number should be the same as on the Set & Haul Data form for this set.

Sighting Method: Enter the code that indicates the method by which you first became aware of the event.

Sighting Method Code List

00 = Undetermined. (for legacy & historical data considerations)
01 = Naked eye.
02 = Binoculars.
03 = First sighted by captain/crew, then by observer.
04 = Sighted by captain/crew only.
09 = Other.

Latitude & Longitude: Record the vessel's lat/lon coordinates from the GPS receiver or plotter at the time of the sighting. Record the minutes to the nearest tenth (only one place behind the decimal point; for example: 15°45**.3** N or 153°19**.1** W). If you are unable to obtain the coordinates right away, record them as soon as you are able. You may encounter a situation where there are many changes in behavior in a short period of time. In a case like this, record the initial position and leave the coordinates in the following lines blank.

Direction N/S: Indicate the hemisphere of the latitude. North = **N**, South = **S**.

Direction E/W: Indicate the hemisphere of the longitude. East = **E**, West = **W**.

Weather Code: Enter the appropriate code that describes the weather.

English Name: Enter an abbreviated common name of the species. There is a list of the common species encountered on the bottom of the form.

Species Code: Enter the 2 or 3 letter code indicating the species code from the Species Code list in the Appendices.

Behavior Code: Indicate the activity of the animal(s).

Behavior Code List

01 = Contact. The animal was observed making contact with any part of the gear (incl. hooked bait). If a bird lands on a float in the water this is considered a contact. If a bird lands on the boat this is not considered a contact. Animals observed becoming hooked or entangled

get this code and are also recorded onto the Catch Log. Observations of bait or caught fish in the animal's mouth / beak can be accepted as evidence of contact, provided the same material (*i.e.* offal, spent bait) was not observed already present in the immediate vicinity of the animal.

02 = Attempt, no contact. An observed unsuccessful attempt to steal / feed on hooked bait or catch. No observed contact with the gear. The animal(s) were observed making direct close approaches / dives at the gear or hooked catch, and were neither observed making contact nor showing evidence of making contact.

03 = Near gear (or vessel), within 50m.

04 = Distance, 51 to 150m.

05 = Feeding on catch. The animal(s) were observed preying on hooked catch. Animal(s) observed in the immediate vicinity of the gear / vessel during hauling operations and catch showing fresh signs of damage or predation typical of the species observed, are evidence of *Feeding on Catch* and should receive this behavior code.

06 = Porpoising - splashing along the surface, breaking the surface regularly, large portions of the body visible.

07 = Bow riding: animal(s) are observed keeping pace with the vessel in front of the bow wave.

08 = Breaching: jumping out of the water and crashing down on flank, back or belly.

09 = Swimming at surface, not porpoising.

10 = Milling: the animal(s) are resting at the surface and are moving about very slowly. Do not appear agitated or excited.

11 = Motionless: the animals are observed floating at the surface and not moving.

12 = Avoidance: the animal(s) suddenly change behavior or direction of movement to avoid the vessel.

13 = Vessel attraction: the animal(s) suddenly change behavior or direction of movement and approach closer to the vessel than the initial sighting distance.

99 = Other: the animal(s) were observed exhibiting a behavior not described in the above available choices. Please describe the behavior(s) on the back of the form in the comment section.

Condition Code - Select the code that represents the state of the animal at the end of the phase you are recording on the line. There can be one condition code per line. A change in the condition necessitates a new line.

Condition Code List

02 = Alive, not injured: The animal(s) of this species involved in this event that are alive & uninjured.

03 = Injured: The animal(s) of this species that are injured at the end of this event. The **Behavior code** of injured animals must be 01.

04 = Killed. The animal(s) of this species that are clearly dead at the end of this event, when the interaction does not occur during gear retrieval.

05 = Dead, fresh: The animal was dead when first observed, and appears not to have died as a result of fishing operations. The *Behavior code* of dead animals can only be 03, 04, 11, or 99.

06 = Decomposed. The animal was dead and exhibiting signs of decay when first observed.

Species Count Block

Often you will observe a large number of animals, such as a mixed species flock of albatross or a large pod of dolphins. In these cases it may be difficult to accurately determine the number of individuals in the group(s). If you are confident that you were able to obtain an accurate count of individuals, like a small group of 1 to 6 individuals; you can enter the same number for the High, Low and Best estimates. For example if you observed a single Black-footed albatross, the High, Low & Best estimates would all be 1. Similarly, if you saw two False killer whales for a period of time and only observed evidence that there were two, then the species count estimates would be recorded as 2, 2, and 2.

Low Estimate: Record your low estimate of the number of individuals of this species present. Use leading zeros if entering a single digit. For Scan Counts, enter a zero "0" if no seabirds are seen.

Best Estimate: Record your best estimate of the number of individuals of this species presents. This number does not have to be the mathematical average or mean between the high & low estimates. Use leading zeros if entering a single digit. For Scan

Counts, enter a zero “0” if no seabirds are seen.

High Estimate: Record your high estimate of the number of individuals of this species present. Use leading zeros if entering a single digit. For Scan Counts, enter a zero “0” if no seabirds are seen.

Sketch: Place a check mark or X in the box if you drew a sketch of the animal(s) or incident.

Photo: Place a check mark or X in the box if you took a photo of the animal(s). Make sure to record the details on your photo log.

Comment: Place a check mark or X in the box if there are comments/notes.

Association Code Block

The elements in this section indicate which other forms may relate to this event. For example, after an animal is observed becoming hooked, the form code CL element will indicate that the capture information is in the Catch Log. If the event on this line follows a previous line, the form code PS indicates that there is another preceding event on this form.

Form Code: A two-letter abbreviation of each form title. It can be found in the lower right corner of each form.

Page Number, Line Number: The page and line number of the form that contains the related information to this event.

BLANK

Chapter 8 Seabird Mitigation Techniques

Introduction

The **S**eabird **M**itigation **T**echniques form is used to record the mitigation techniques employed by the vessel during setting and retrieval operations.

General Instructions

The mitigation techniques are recorded both during the set and the haul of the longline gear. Observers are required to observe the first hour of the setting gear.

Data Elements

During Set Block

Deterrents Used: Place a checkmark or X in the appropriate box for each deterrent used during the setting of the longline gear.

Number of Floats Observed: Record the number of floats you watched set out during the setting of the longline gear. If set is made during daylight hours, try to observe a minimum of 10% of the floats. Use leading zeros as necessary.

Night Setting: The **Begin Set** time is **at least one hour after the setting of the sun**, and the set must have been completed at least one hour before sunrise. Use your issued GPS to figure out the time of local sunset. Do this by pressing menu-celestial-sun and moon.

Towed Buoy: A buoy or other floating object towed behind the vessel where baited hooks are deployed during the observed portion of the set.

Tori Line: A line approximately **150m** with intermittent swivels and streamers towed behind the vessel that covers the area where baited hooks are deployed during the observed portion of the setting of the longline gear. Note in the comments if the line did not completely cover the gear.

Line Shooter Used: A mechanical line setting device (line shooter) was used to deploy the mainline during the observed portion of the set.

Water Spray: During the observed portion of the set, water was sprayed on the sea surface on, near, or behind the area where the fishing gear was entering the water.
Deflate Swimbladder: During the observed portion of the setting of the gear, the

swimbladders of fish used for bait were punctured or deflated. **Note:** Squid do not have swimbladders, therefore, if squid are used as bait, this deterrent cannot be used.

Blue-dyed Bait: During the observed portion of the setting of the longline gear, the bait was dyed blue. The blue color must be at least the same intensity as the NMFS blue color standard for bait. If the blue does not match the NMFS color standard, leave this box blank.

Weighted Branch Line: Weighted branch lines are used during the observed portion of the setting of the longline gear.

Strategic Offal Discard: Did vessel personnel discard offal (fish parts, excluding bait, not intended for human consumption) in a manner that attracts seabirds away from the longline gear during the observed portion of the set. If so, mark this box. **Note:** Use of this deterrent is not possible while deploying the gear for the first set of a trip or when no birds are present. If there are no birds present then leave this box blank and record no birds present in the comments section.

*****If spent bait is retained during the haul and strategically discarded during the following set, check the *Other* deterrents box. Make sure to describe the situation in the comments section.

Bait Thawed: During the observed portion of the setting of the longline gear, the bait was completely thawed.

Set Underwater: During the observed portion of the set, was the gear deployed with an underwater setting chute?

Bait Set Outside Wake: During the observed portion of the set, the baits were thrown outside the vessel's wake.

Gear Set from Side: The longline gear was deployed from the side of the vessel. The shooter is mounted on one side of the vessel. Some vessels may have the line shooter on one side or corner of the stern. That is not considered side setting.

Other: During the observed portion of the set, the vessel crew did something specifically to reduce seabird bycatch that is not included elsewhere in this list.

During Set Comments: Describe any other bird deterrent(s) used during the set. Describe any deterrent(s) used, but not properly deployed.

During Haul

Deterrents Used: Place a checkmark or X in the appropriate box for each deterrent used during the hauling of the longline gear.

Night Hauling: The **Begin Pull** time is **at least one hour after the setting of the sun**. If the end of the pull was not completed at least one hour before sunrise note this in the comments. Use your issued GPS to figure out the time of local sunset. Do this by pressing menu-celestial-sun and moon.

Towed Buoy: A buoy or other floating object towed behind the vessel where baited hooks are present during the hauling of the longline gear.

Tori Line: A line approximately **150m** with intermittent swivels and streamers deployed so that it covers the area where baited hooks are retrieved during the hauling of the longline gear. Note in the comments if the line did not completely cover the gear.

Water Spray: During the observed portion of the haul, water was sprayed on the sea surface on or near the area where the fishing gear was exiting the water.

Blue-dyed Bait: During the hauling of the longline gear, the bait was dyed blue. Properly dyed bait will be faded, but a light blue color will still be evident. If more than a few baits appear undyed or several undyed baits are on consecutive hooks (i.e. one or more baskets), do not check this box. Document the details in the Comment section.

Weighted Branchline: During the haulback, most of the branchlines observed had weights attached. If more than a few branchlines did not have weights on them or several consecutive unweighted branchlines were observed, leave this blank and describe the situation in the Comment section on the form.

Strategic Offal Discard: Did the vessel personnel discard offal (fish parts not intended for human consumption) off the stern or opposite side of the vessel from where the longline gear is hauled aboard during the haul when there are birds present? If there are no birds present then leave this box unchecked and record in the comments section no birds present.

Strategic Bait Discard: Did the vessel personnel discard spent bait off the stern or opposite side of the vessel from where the longline gear is hauled aboard when there were birds pesent? If so, mark this box and describe the bait discard in the Comment section. If the spent bait is retained on board, leave this blank. If the spent bait is thrown over board on the same side as the gear is hauled aboard, leave blank. If there are no birds present then leave this box unchecked and record in the comments section no birds present.

Other: During the observed portion of the haul, the vessel crew did something specifically to reduce seabird bycatch that is not included elsewhere in this list.

During Haul Comments: Describe any other bird deterrent(s) used during the haul. Describe any deterrent(s) used, but not properly deployed or performed.

BLANK

Chapter 9 Catch Event Log

Introduction

The **C**atch **E**vent **L**og form is a record of the total number of fish and protected species (sea turtles, seabirds, marine mammals) **captured** during a set and their condition, disposition and measurements. The data are used to determine catch rates for target and non-target species in the fishery.

General Instructions

Record each fish in the order it is caught. Use the common English names from the Species Code list for the species of fish caught. Each fish should be listed individually. The higher priority elements within a line are to the left. Species composition and location (species name & float/hook no.) data are more important than condition data, which are more important than measurements. The check boxes at the end of each line are an exception.

It is your duty to personally see everything that comes up on the line. You must tell crewmembers to wait until you have witnessed and identified the catch before they cut or unsnap any leader. This request may need to be made several times for some crews who continue to cut or unsnap leaders before you have identified the catch. If your requests are denied, document each incident in the Interference Section of your Documentation Notebook.

Do not record unknown objects, unseen animals, or squid and other invertebrates on this form. If there is an unknown object on the line (*i.e.* something comes off the hook/line before you could determine what it was) describe the situation in the Comments section of the form. Likewise, record squid or other invertebrates that come up hooked or entangled in the Comments section. Make sure to record the float & hook number with the comment. Comments on unknowns and invertebrates will be entered on the Set & Haul entry screen during data entry.

SPECIAL NOTE FOR OBSERVING SEA BIRDS AND RECORDING PROTECTED SPECIES INTERACTIONS

During bird scans or protected species interaction reporting on the PSEL, you must continue to keep track of what is coming up on the hooks and record everything caught on the data forms. However, it is ok if you do not get all of your measurements.

Record the approximate length (AL) for fish or sharks that you are unable to measure. Do not measure fish with missing tails, with broken or damaged spinal columns, or if taking the measurement will endanger you (such as with a large active

shark). Record the **approximate length** of fish that fall off or are accidentally knocked off the hook before they are landed.

Observers should ask that, if possible, every 3rd fish be brought on board to measure. It is again allowable to give an AL for sharks that the crew does not want to land for safety reasons.

Some vessel crews do not want to injure small tunas by bringing them aboard. If they are doing this, ask them to bring aboard the fish so you can measure them quickly before returning the fish to the sea.

Data Elements

Observer ID: In the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: The unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number.

Set Number: Sets are numbered consecutively for each observed trip beginning with 01.

Catch Page Number: Number the first page of each set 01. This means that the first page you start with each day should be 01; do not number pages consecutively throughout the trip.

Haul Date: Record the **day that the haul back begins** using the standard date format. Note: Continue to use the same haul date even if the haul goes past midnight.

Page Number Column: Enter same page number as entered at the top of this form page. It is acceptable to record the page number on the first line and draw an arrow down the column.

Line Number: These are already filled in and cannot be changed.

Species English Name: Record the English common name of the species caught. A list of commonly encountered fish with their species codes is at the lower left corner of this form. A complete list is located in chapter 20 of this manual. If you run out of lines, continue recording the data on another CL form. If you run into a situation where there are numerous fish of the same species being pulled up one after the other it is acceptable to write the name of the species on one line and then draw an arrow down to all subsequent lines

Species Code: Enter the three-digit species code from the Species Code list (Chapter 20) for all fish. Note: There are separate codes for *unidentified types of animals* and *other identified* animals. Other identified means you were able to identify the animal, but the species doesn't have a species code assigned to it. **Do not** draw arrows down for the same species codes.

Float Number: Floats are counted sequentially beginning with the first float brought aboard the vessel during the haul. Record the number of the float that immediately preceded the fish that are caught. For example: if float 10 comes up, then 3 hooks later a fish is caught, record float number 10 for that fish. Should the line part, continue to record float numbers sequentially. For example: if the line parts at float 50 and the vessel motors to the end radio buoy to haul the gear; that radio buoy is counted as float 51 and the other floats are counted sequentially for the rest of the haul. **Do not** draw arrows down for the same float numbers.

Hook Number: Hooks are counted sequentially between each float. Start with number 1 after <u>each</u> float is brought aboard. For example: if float 10 comes up, then 3 hooks later a fish is caught, record hook number 3 for that fish. Occasionally two fish will come up on the same hook due to predation on the first fish that was hooked. Both fish should be recorded on separate lines with the same hook and float number. The fish that was caught first should have damage code of CO with comments. The second fish should have comments stating that it became hooked while feeding on catch. If it is not obvious predation still record both fish and describe the situation.

Caught Condition: Indicate the condition of the animal at capture with these codes.

> **Fish & Sharks: A** = Alive (active). **D** = Dead (or inactive). <u>If you are unable to determine whether or not a fish is alive, enter D.</u>
> ***Caught Condition codes ***I*** & ***U*** are reserved for protected species. They will not be accepted for fish or sharks.
>
> **Protected Species: A** = Alive, **D** = Dead, **I** = Injured, **U** = Unknown.

Kept/Returned: Indicate if a fish is kept or returned, and its condition at the time of return by entering the appropriate letter code from one of the following categories. Fish that are returned to the environment, non-marketable species (incl. non-marketable species retained by the observer) and fish that come off hooks should be marked with one of the return codes.

***A fish or shark retained by the observer as a specimen (identification purposes or a research request) should be marked as though it were returned *Dead*.**

K = Kept: Fish retained, in part or whole, by the fishermen for sale or personal consumption. Note: Sharks are considered *Kept* if any body parts (*i.e.* jaws, gall bladder, skin) other than the fins are retained. These parts are sometimes taken in addition to the

fins.

A = Alive: A = Alive: For a fish or shark, a Return code of Alive indicates that the animal was active when it was returned to the sea. Note: animals marked as returned *Alive* must have been recorded as *A* (alive) in the Caught Condition column. The "I" (Injured) code is reserved for protected species only all others are listed as A or D. For example, thresher sharks are often "tail hooked" and the tip of the shark's tail may be cut off to remove it from the hook. This shark should be marked with a Return Code of A.

For Protected Species, a Return Code of Alive indicates that the animal freed itself and swam or flew away from the gear with no visible injuries or deformations. However; protected species that are observed hooked before freeing themselves should be marked as *Injured*, even if you don't see any blood or wound. They must have freed themselves from the gear through their own efforts. For example; an animal is observed lightly entangled, but swims free of the gear.

D = Dead: Dead indicates the animal did not swim away after being returned. There may be no visible muscular activity. The animal may be stiff from rigor mortis or limp. Inactive fish and fish which you are unable to determine if they are alive or not, should be marked as returned *Dead*.

A fish or shark retained by an observer as a specimen (for identification purposes or a research request) should be marked as returned *Dead*. The vessel's crew would be assumed to have discarded the fish, and not retained it for sale or personal consumption.

I = Injured: (Only for protected species) Injured indicates the protected species was physically damaged as a result of becoming hooked or entangled in the longline gear. The injuries can be visible, like open wounds, or not visible, like bruising or internal bleeding. An animal with visible deformations of the body or body parts is considered *Injured*. An animal that flies or swims in an abnormal manner after being released, should be marked as *Injured*. All hooked animals are considered *Injured*, no matter the severity. Animals that are observed entangled and are unable to free themselves are considered as *Injured*. If they are disentangled or cut free from the longline gear by the crew or the observer, the animal should be marked as *Injured*. Animals that are released with part(s) of the fishing gear attached to their bodies are considered *Injured*. Describe all injuries of protected species on the appropriate biological form or PSEL as fully as you can, in addition to recording the data elements required to complete this form. Take a photograph of the injury, if possible. Make sketches if necessary, to help describe the location of the injury. For the injury, make notes on the color, the shape, any bleeding or other discharge(s), missing body parts, any abnormal function, and the behavior animal after it was released.

F = Finned: This code is for sharks only. It means that the fins, and only the fins, were retained and that the rest of the shark's body was discarded. Sharks are marked as kept if any body parts (*i.e.* jaws, gall bladder, skin, body) other than the fins are retained. These parts may be taken in addition to the fins. If a crew kept the fins and

shark gall bladders, the sharks would be marked as *Kept.*

U = Unknown: The animal was returned to the sea, but the observer was unable to determine the condition of the animal, or the animal was returned to the sea in a condition other than above. This includes unobserved discards. Describe any unknown returns in the notes/comments section.

Damage: Record the appropriate code for any damage observed. Damage refers to damage caused by other animals, not from gear or crew. Refer to the damage code list on the form. Use the code the "*ND*" (*Observation Shows no Damage*) if you looked and did not see any damage. If you could not tell if the fish was damaged (*i.e.,* the fish came off the hook or the line was cut, before you could get a good look at the animal), record "*UO*" (*Un-Observed)*. Do not consider damage caused by efforts to land the fish (i.e. hook, line, or propeller damage). . Describe any damage not covered by one of the damage codes. Refer to Catch Log page and line number, as well as the fish's common name in the comments section of the form. It is acceptable to draw an arrow down if you have numerous fish with code ND. Enter CO for fish with two or more damage types, and explain the damage in the comment.

Sex: Indicate the sex of the specimen with an M or F. If the gender of the animal is unknown or undetermined, leave this blank. Refer to the following species group instructions for information on determining the sex of an individual fish.

MEASUREMENT

Measure every third fish caught, whether or not the vessel intends to keep the fish. Start by measuring the first fish caught and every "3rd " fish after that. For example you will **only** record measurements for fish recorded on lines **1**,**4**,**7**, **10**, and **13.** You will need to ask the crew to bring aboard species that they don't usually keep such as lancetfish and snake mackerels. If a shark is alive and the crew would not normally bring it on board because of safety reasons then you do not need to ask them to bring it aboard; just record the approximate length. If a "3rd " fish comes off the hook before being brought on board, make a visual estimate of the Fork Length in FEET (*Approximate Length*, code AL). This applies to fish that are hooked or entangled. Record the length to the nearest centimeter. Measure the left side of the body, if possible. Accurate length measurements cannot be obtained from fish whose tails have been cut off, damaged or have a severed/damaged spinal column. If the fish is too damaged to accurately measure, record the appropriate Approximate Length.

Measurement Code: Enter the two letter code indicating which measurement(s) was taken. Different species groups have the following different measurements taken:

- **Billfish: EF** – eye to fork

- **Sharks: FL** – fork length
  PC – pre-caudal length

CI – clasper inner length

***Do not measure Rays**

All Other Fish: FL – fork length

Approximate Length for Billfish - Eye to Fork length: Estimated length in feet, from the posterior margin of the eye orbit to the fork in the tail.

Approximate Length for Sharks, Tunas & Other fish - Fork length: Estimated length in feet, from the tip of upper snout to the fork in the tail. When estimating the fork length of a thresher shark; you may use half the total length (snout to tail tip) as the value for the AL if you can't see the fork area.

Measurement: The dimension(s) of the animal are measured with the 2m calipers (or measuring tape for the clasper inner length of male sharks). Enter the length to the nearest whole centimeter. There are instructions and diagrams at the end of this section for clarification. Do not write *cm* or *ft* in the box after the numbers. In the case of an AL, write in the visual estimate you made of the fork length (FL) or eye-to-fork (EF).

Tagged: Check or X this box to indicate that a tag was recaptured or applied on this animal. If no tags were recaptured or applied, then leave this blank.

Specimen: Check or X this box to indicate that a biological specimen was collected from this animal. This could include a whole animal (fish, turtle or bird). If a specimen was not collected from the animal, leave this blank.

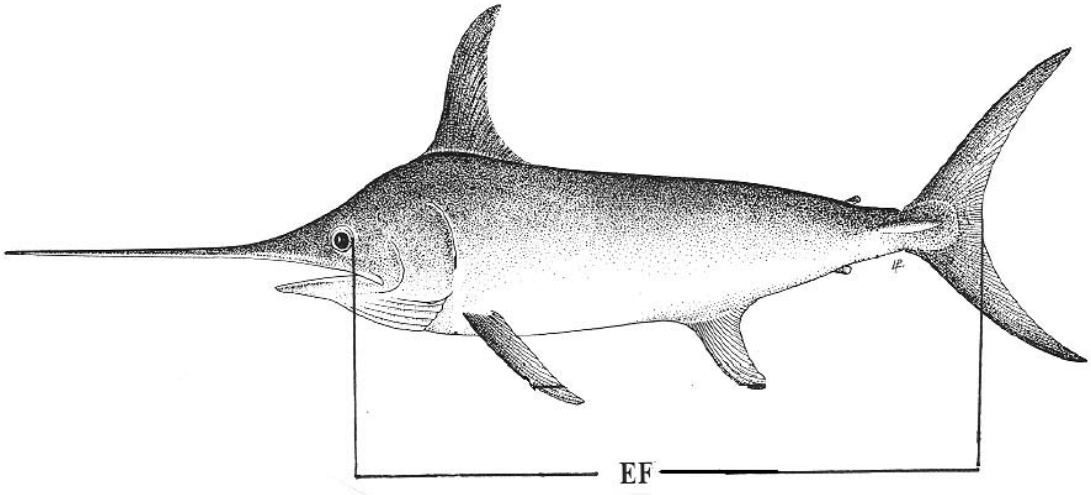
Photo: Check or X the box if you took a photo of the animal.

Sketch: Check or X the box if you made a sketch on a Sketch Form of this animal. If you made a sketch of this animal on one of the Sketch ID forms required on your first couple of trips, do not check this box.

Comments: Check or X this box to indicate that you made a comment about this animal in the CL describing damaged animals, animals with unknown disposition or other notes on the catch.

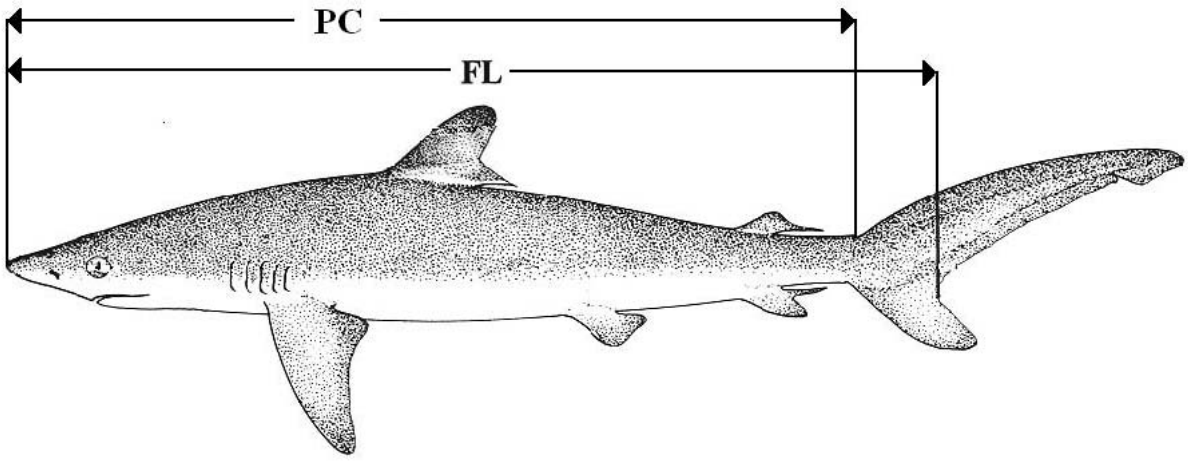
BILLFISH: (Marlins, Swordfish, Spearfish)

Eye to fork (EF): Measure from the posterior margin of **left eye** orbit to the inside of the fork in the tail. This measurement is taken with the 2m calipers.

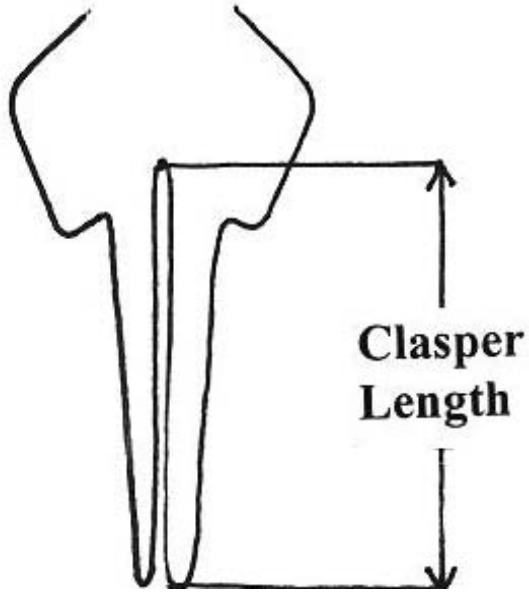


SHARKS

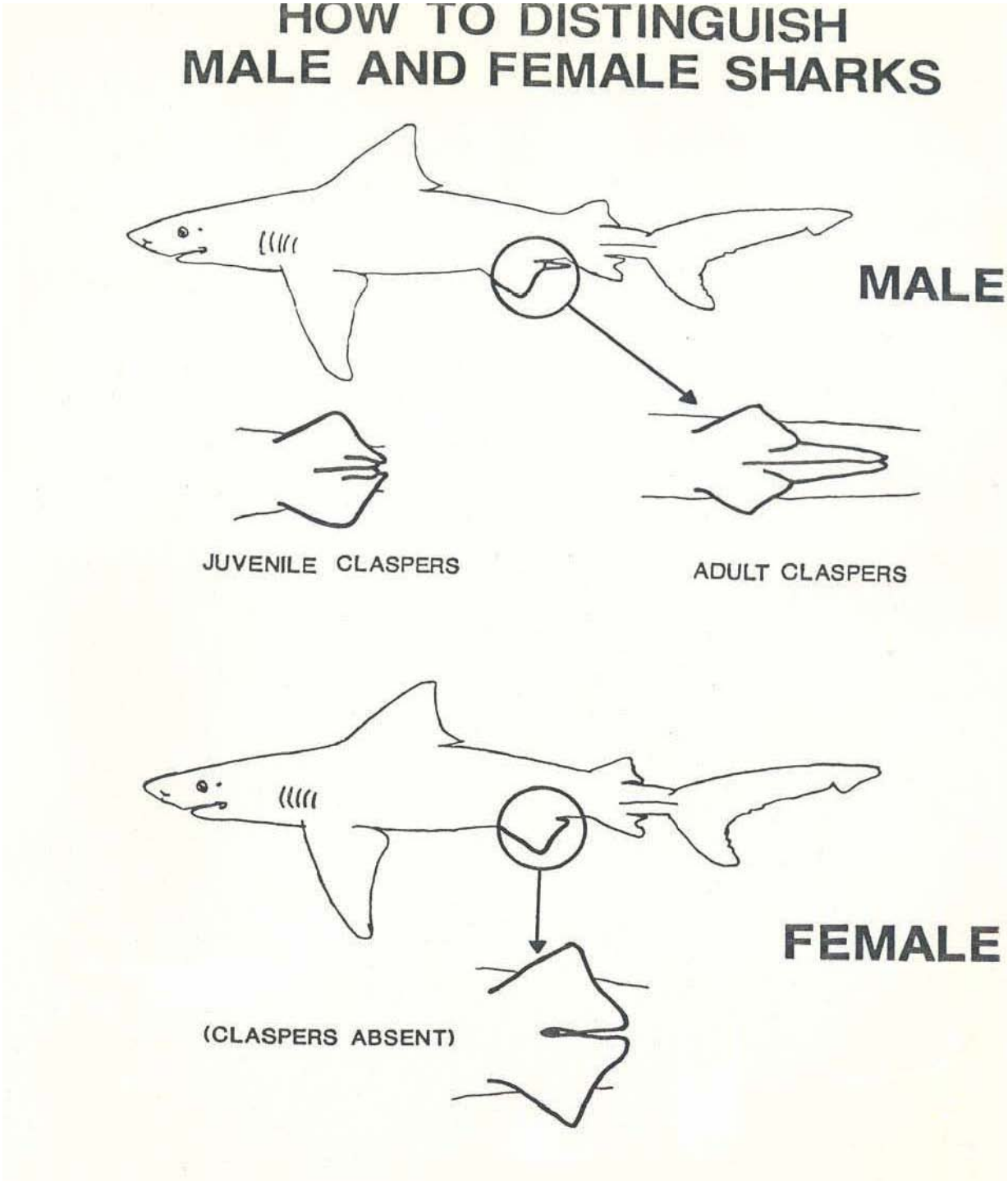
Fork length (FL): Measure from the tip of the snout to the center of the fork in the tail.
Pre-caudal length (PC): * Measure from the tip of the snout to the pre-caudal pit (small crease) at the end of the caudal penduncle. If the shark does not have a pre-caudal pit, use the point where the front edge of the upper tail lobe meets the caudal peduncle.



Clasper Inner Length (CI): For male sharks, measure from the tip of the clasper to the center of the angle between the claspers.

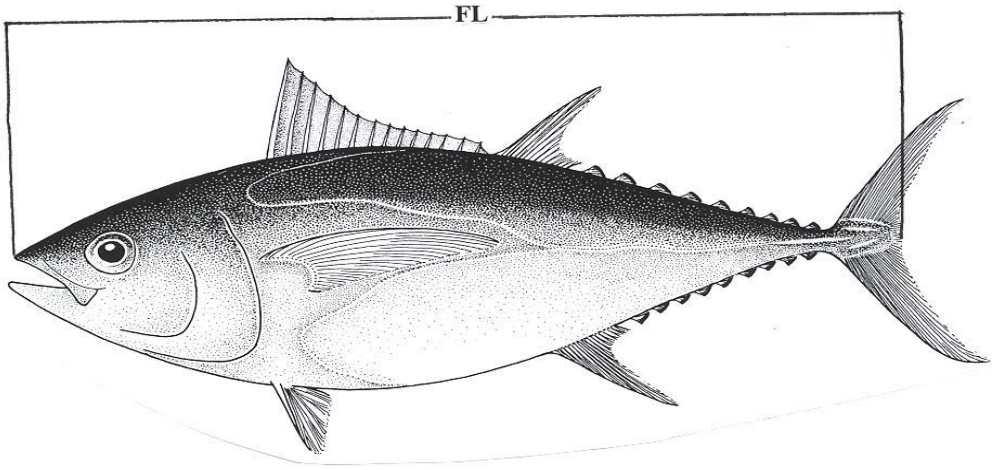


Shark Sexing Diagrams (Also works for Rays)



TUNAS And All Other fish

Fork length (FL): Measure from the tip of the snout to the inside of the fork in the tail. If an opah's mouth is open, close it to take the measurement. **NOTE:** For fish with modified caudal fins (ie. Slender molas, crestfish, etc.) measure to the middle of the tail. **Do not measure Rays**.



TUNA SEXING:

Female: The ovaries are fusiform (spindle shaped) paired structures. They are suspended from the ventral surface of the gas bladder, which can be confused with the dorsal wall of the coelom (gut cavity), and are united at their posterior extremities, terminating just behind the anus. The ovaries are yellowish in color and circular in cross-section.

Male: The testes are compressed (somewhat flattened) lanceolate paired structures. The testes are white or light cream in color and flattened in cross-section.

Opah Sexing Diagram

Male:

Female:

**** Note the sharp angle and concave nature of the male chestplate and the more gentle slopping, convex nature of the female chestplate.***

Dolphinfish Sexing Diagram

Male:

Female:

**** Note the pronounced bony crest of the male forehead and the gentle slopping, convex nature of the female forehead.***

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Chapter 10 Sea Turtle Handling and Data Collection

Introduction

If a Sea Turtle is caught incidentally there are specific protocols that must be followed when handling these turtles. These protocols and guidelines have been developed to reduce the risk of further injury to the turtle and the people handling the animals. When a Turtle is caught work with the crew to get the turtle on board safely or alongside the vessel if it is too large to bring aboard. Special dehooking equipment has been developed to remove gear from hooked and entangled sea turtles and is described in detail in the first section of the chapter.

Once the turtle has been safely brought on board or alongside the vessel your job is to collect samples, photographs, and measurements, apply tags when applicable, and to remove as much gear as possible. Procedures are found throughout this chapter. All information is to be documented on the Sea Turtle biological data form. Instructions on how to fill out his form can be found towards the end of this chapter. In addition any photographs, specimens, or tags applied or recaptured need to be filled out on the appropriate logs. Incidentally caught protected species need to be reported to PIRO using the satellite phone as soon as possible.

Data collection

1. Skin biopsies from all turtles
2. Carcass of dead animals when small enough to bring aboard
3. Photographs
4. Identifying characteristics described
5. Measurements for landed turtles
6. Position and time of capture
7. Detailed description of how gear was attached and how much remains if not all can be removed.
8. Detailed Description of how turtle was landed and handled on deck.
9. Apply flipper tags to live turtles brought on board
10. Apply PSAT (Pop-up Satellite Archival Tags) to live, Hard-shelled Turtles brought on board

Photographs that need to be taken for turtles brought on board include a **dorsal**, **ventral**, and **frontal** view, as well as a photo showing the hook location in the turtle. (If the hook will be removed, take the photo before removing the hook.). If a satellite tag (PSAT) is attached to the turtle, take a picture of the carapace showing the satellite tag after attachment. For turtles that are to large to bring aboard try to get as many photos as possible showing where the gear is attached and any distinguishing ID characteristics.

Data collected on turtles will be used to determine the number, species, size and condition of sea turtles involved in the longline fishery in the central Pacific. Other data are recorded on the movements and preferred habitats of the various populations of sea turtles. These data are critical to the development of conservation and recovery strategies for these marine reptiles.

Sea Turtle Handling and Dehooking

In April 2004, the swordfish fishery (shallow-set) in Hawaii reopened under *Federal Regulations* (April 2, 2004 volume 69, pages 17329-17354) requiring the use of specialized equipment, gear configurations, 100% observer coverage on board all Hawaii Longline vessels that shallow-set, and a limited set certificate program. Dehooking equipment is required aboard all vessels with a general permit for the Hawaii Longline fishery for both deep-set and shallow-set vessels. Deep-setting vessels target tuna, while shallow-setting vessels target swordfish. The dehooking equipment is used for the safe release of incidentally caught sea turtles. This equipment has been demonstrated as being effective for increasing the post-hooking survival of sea turtles. A 3 year study in the North East Distant waters showed dehooking increased survival for both loggerheads and leatherback turtles (Watson 2003). In Hawaii there currently is a cap on how many loggerheads and leatherbacks can be caught in a calendar year. If this cap is reached the fishery will close for the rest of the season.

A number of specific dehookers and related items that meet specific minimum design and performance standards must be carried aboard the vessel. (see Table 1) As a NMFS observer you should be familiar with the equipment your assigned vessel has, and where it is kept in case you need to use it.

Though there are a few different options in the regulations, most vessels carry the "pigtail" version of the dehooker.

There is also a "j-style" and the "Scotty's" dehookers for external hooks.

Releasing turtles with minimal injury:

What are dehookers and what is the incentive for using this equipment?

The most important purpose of the dehooker is to reduce the mortality of turtles. Post hooking survival can be increased when the hook is removed with minimal injury. By opening the fishery with the dehooker requirement, we may reduce the chances of exceeding the annual allowable mortality for the fisheries incidental take statement. The incentive for fishers is that they retain their hooks, which can be costly and reduce their re-rigging time.

What are the observer's responsibilities?

Observers are responsible for assisting the vessels crew in an attempt to remove all the gear, including line and hooks must be made. All efforts should be made to release the turtle with minimal injury. Owners and captains are required to attend an annual protected species workshop where they are presented with the dehooking techniques and turtle handling procedures. Though captains are presented with this material, you obtain a more hands on and extensive training, therefore it is up to you to ensure that the crew follows the required procedures. Each vessel has the same laminated instructional placards given out during observer training. During the haul, while scanning the

mainline keep watch for turtles. Upon sighting a turtle, the vessel operator must stop the vessel. Bring the turtle alongside the vessel by slowly and gently retrieving the branch line. Do not use gaffs or any other sharp devices to retrieve the turtle. Determine if you are able to land the turtle depending on the size and sea conditions. Turtles less than 3 feet in carapace length can generally be brought aboard safely. Work and coordinate with crew members. Dehooking a turtle, especially one that is too large to bring aboard requires assistance and cooperation from others. This is not a one person operation. Cooperating will result in the best possible release of the turtle. If possible take a picture of the turtle as it is being pulled to the boat prior to sampling and release. Once the turtle is alongside the vessel, determine whether or not you will be able to dehook the turtle on board or while it remains in the water. You should then assess the location of the hook/entanglement and proceed with the best possible release that will cause the minimal amount of injury to the turtle.

What should I do if the turtle is too big to bring aboard or safety conditions are questionable?

If you are unable to board the turtle due to size or conditions, take photos and samples then remove the gear while the turtle remains in the water. The turtle may need a short time to calm down. Make sure to try to do the following in this order:

1. Get a biological sample with the biopsy pole
2. Take photos to show where the turtle is entangled/hooked
3. Then begin the dehooking/release process as quickly as possible

What should I do if the turtle is small enough to board?

1. Bring the turtle aboard using a dip net
2. take photos to show where the turtle is entangled/hooked
3. dehooking
4. biological sampling

What if removing the hook may cause more damage?

Deciding whether to remove a hook or not is a judgment call for each case on the part of the observer. Almost all external hooks should be able to be removed. If the hook is in a place where removal may cause more damage then the hook should be left alone. For example a hook embedded in the brain or glottis might be best left alone. Remove hooks where the insertion point is visible. Bolt cutters may be more efficient than using a dehooker. Just cut the eye or barb of the hook and pull out the other end using long nose pliers. If the hook cannot be removed cut off as much of the visible part of the hook as possible. Always cut away as much gear as possible.

What equipment is required on all Hawaii Longline vessels?

Make sure you familiarize yourself with the different types of equipment as there are

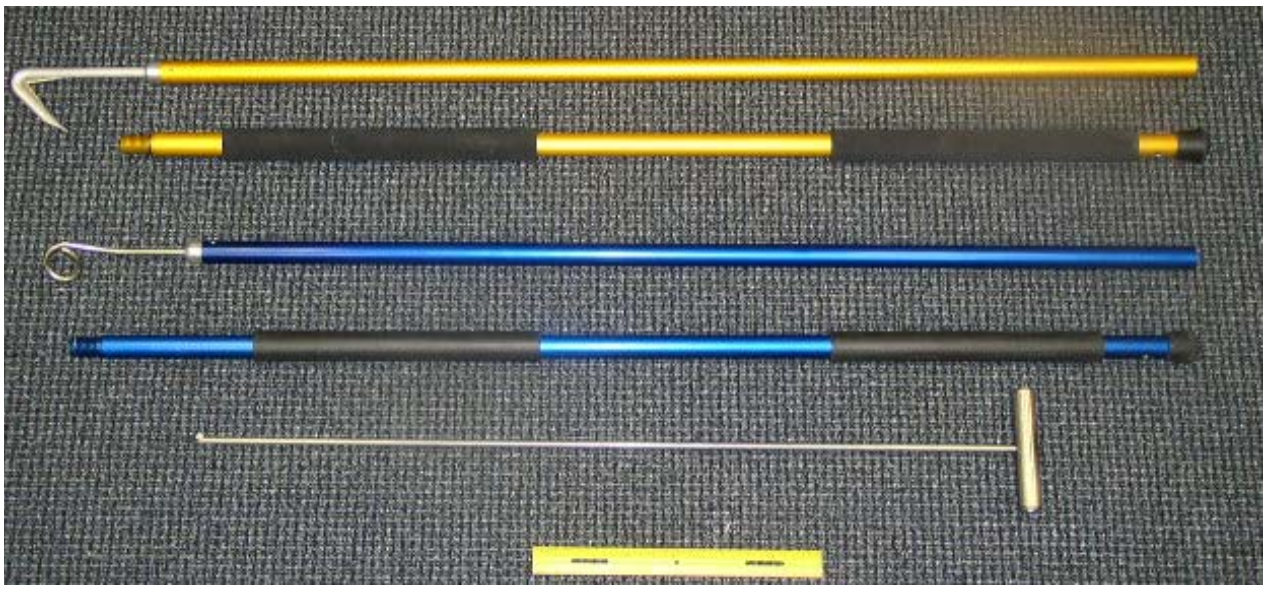
different options for each requirement. All observers will go through classroom and dockside training with the pigtail dehookers (both long and short handled)

1. Long handled dehooker for ingested hooks
2. Long handled dehooker for external hooks
3. A long handled device used to pull an inverted V
4. Short handled dehooker for ingested hooks – pigtail with bite block
5. Short handled dehooker for external hooks – jstyle and scotty's
6. Long handled device for pulling an "inverted V"- Gaff or long handled jstyle dehooker for external hooks
7. Long handled line clipper – NOAA/LaForce
8. Tire
9. Dip net
10. 2 of 7 mouth openers: Wood, hank of rope, canine mouth openers, rope with protective hose covering, set of 4 PVC couplings, 2 sizes of nylabones

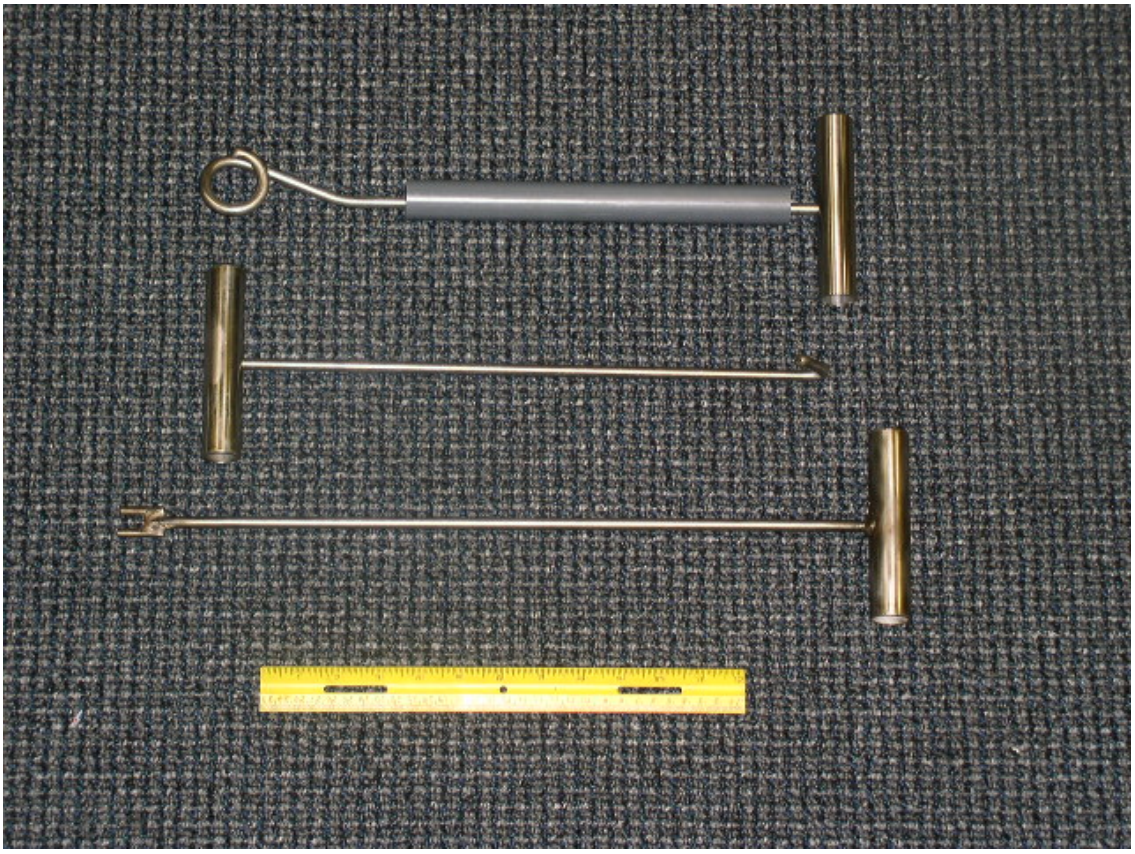
Gaff: A standard gaff found on almost any fishing vessel can be used to fulfill the requirement of a device to "pull and inverted V" (technique described later). It will be used to assist in detanglements, never to control the turtle.

Long handled "pigtail" dehooker: This dehooker comes in 2 pieces that is easily assembled by twisting them together. Use this dehooker to remove hooks from turtles that are too big to be boarded.

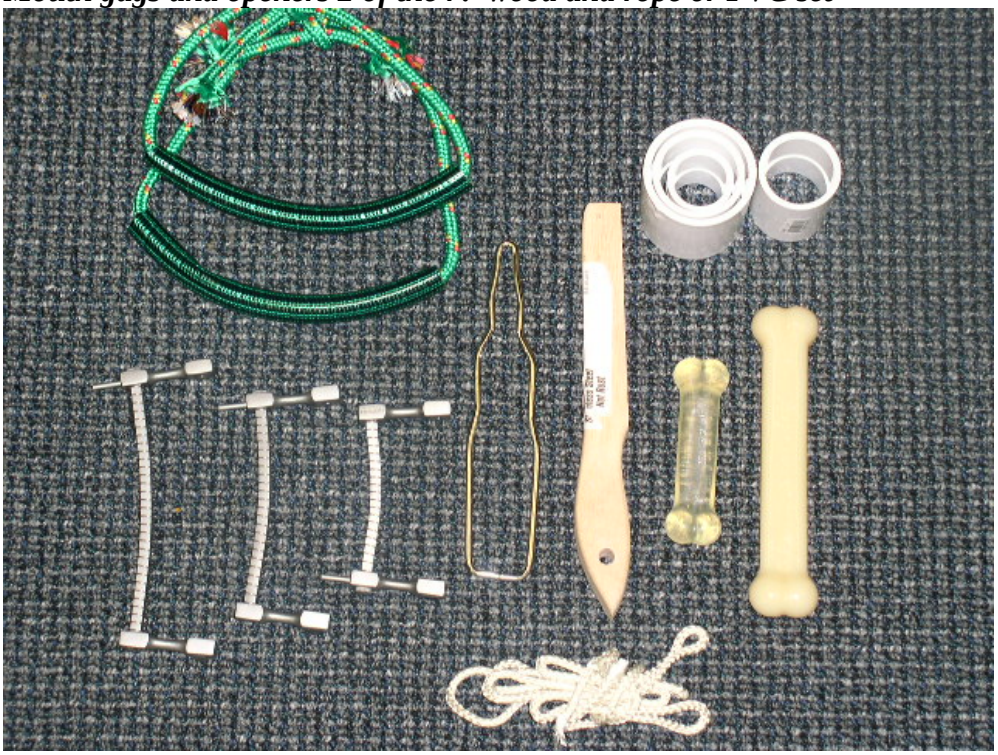
Line cutter: Every vessel must carry a long handled line cutter to assist in cutting the line from turtles that are released while they remain in the water.



Short handled "pigtail' dehooker: This dehooker is used for turtles brought on board. The PVC pipe is to protect the turtle's beak from becoming damaged from the metal of the dehooker. It also serves to hide the barb of the hook to prevent re-engagement once the hook has been released. The J-style and Scotty's dehokers are also shown here and are used to remove external hooks that aren't to deep.



Mouth gags and openers 2 of the 7: wood and rope or PVC set



What is the minimum equipment that fulfills the regulations?

1. Long handled pigtail for both external and ingested hooks
2. Short handled pigtail dehooker with bite block for both external and ingested hooks
3. Device for pulling an "inverted V": either long handled dehooker for external hooks (Jstyle) or a gaff
4. Mouth gags and openers 2 of the 7: wood and rope or PVC set
5. Standard tire
6. Dip net

How do you use a long handled pigtail dehooker?

1. The person holding the line attached to the turtle should try to stay to the left of the dehooking person while keeping the line taut. The dehooking person should have the mono to the left, and the dehooker to the right. Make sure to stay clear of being in between the leader and the dehooking device because if the line snaps it could be dangerous.
2. The person dehooking will place the dehooker on the line (perpendicular / at a 90 degree angle) with the opening of the pigtail facing up.
3. Pull the device toward you as you would a bow and arrow, until you engage the line.
4. Turn the dehooker a ¼ turn clockwise, putting the line in the center of the curl.
5. Slide the dehooking device down the line until it engages the shank of the hook and bottoms out. You my have to rotate and move the device back and forth until the top portion of the pigtail is resting on the shank of the hook. This is proper engagement on the hook.
6. Once engaged, bring the line and the device together making sure the mono is tight and parallel with the dehooking device.
7. Communicate with the leader person so you know when to give slack and when to pull taut and prevent injury. Give a thrust downward until the hook disengages, then gently pull the dehooker upwards, with the hook holding the line taut so the hook is not loose and does not re-engage.

Care and release of a turtle once the hook has been removed:

1. Place the turtle in a secure and shaded location for a minimum of 4 hours and up to 24 hours. It is best that the stress toxins have time to dissipate.
2. Cover the turtle with wet towels, occasionally spraying the animal with a deck hose. Be careful not to spray its head and nostrils
3. When the turtle is ready to return to sea make sure there is no fishing gear in the water and stop the vessel by placing it in neutral to disengage the propeller.

What type of scenarios might I encounter if a vessel interacts with a turtle?

A) Entangled but not hooked
B) Hooked but not entangled
C) Hooked and entangled

a) The Inverted V technique: Used when it is difficult to engage the line closest to the hook with the dehooker. Carefully engage the line closest to the hook with a gaff. Make sure to avoid hitting the turtle with the point of the gaff. Hold the line up ward with the gaff forming an inverted "V". The dehooker person can then engage the line and continue with the steps for using a long handled dehooker.

How do you use a short handled pigtail dehooker?

1. The dehooking person should hold the mono in the left hand, and the dehooker in the right holding the PVC pipe towards you up against the handle.
2. Place the dehooker on the line (perpendicular / at a 90 degree angle) with the opening of the pigtail facing up.
3. Pull the device toward you as you would a bow and arrow, until you engage the line.
4. Turn the dehooker a ¼ turn clockwise, putting the mono in the center of the curl.
5. Release the PVC and slide the dehooking device down the mono, holding until it engages the shank of the hook and bottoms out. You may have to rotate and move the device back and forth until the top portion of the pigtail is resting on the shank of the hook. Drop the PVC pipe down. This is proper engagement on the hook.
6. Once engaged, bring the line and the device together making sure the mono is tight and parallel with the dehooking device.

7. Give a thrust downward until the hook disengages, then pull up the dehooker holding the PVC down. Hold the line taut so the hook is not loose and can't possibly re-engage.

Resuscitation

All turtles that appear dead or comatose (unconscious) should be brought on board to attempt to revive the animal, when practical. The following resuscitation techniques should be implemented:

1. Place the turtle on its bottom shell (plastron) so that the turtle is right side up and elevating its hindquarters at least 6 inches (15.2 cm) for a period of 4 up to 24 hours. The amount of the elevation depends on the size of the turtle; greater elevations are needed for larger turtles. Periodically, rock the turtle gently left to right and right to left by holding the outer edge of the shell (carapace) and lifting one side about 3 inches (7.6 cm) then alternate to the other side. Gently touch the eye and pinch the tail (reflex test) periodically to see if there is a response.

2. Sea turtles being resuscitated must be shaded and kept damp or moist but under no circumstance be placed into a container holding water. A water-soaked towel placed over the head, carapace, and flippers is the most effective method in keeping a turtle moist.

3. Sea turtles that revive and become active must be released over the stern of the boat only when fishing or scientific collection gear is not in use, when the engine gears are in neutral position, and in areas where they are unlikely to be recaptured or injured by vessels. Sea turtles that fail to respond to the reflex test or fail to move within 4 hours (up to 24, if possible) must be returned for Scientific Research.

Observers are to request, from vessel personnel, that **any dead sea turtles** encountered during a cruise be **retained** after processing for return to Honolulu. This includes dead turtles that may be encountered "free floating" and which are not necessarily attached to any gear. Very large sea turtles, i.e., full-grown Leatherbacks, may present problem with handling and storage on board the vessel until the end of the cruise. Dead turtles too large to bring aboard or store in the vessel's hold space may be returned overboard after all samples, measurements, and photographs are taken.

When a sea turtle comes aboard dead and will be brought back to port:

Leave any entangled line or hook in place. Leave the free end about 2ft long.
Do not apply flipper tags and leave any tags present in place.
Collect two skin biopsies.

Take **three (3) photographs of identifying characteristics**: Dorsal, Ventral, and Frontal views.
Complete a Sea Turtle Biological Data Form.
Record the turtle on the Specimen Log and update your Radio Report form.
Double wrap and store frozen or buried in ice until the turtle is secured at the NMFS, Pacific Islands Fishery Science Center in Honolulu, HI.

Instructions For Applying Metal Flipper Tags On Sea Turtles

Special Conditions

All tags shall be cleaned (e.g., oil residue) and disinfected before being used. First, wash the tag with soap and rinse thoroughly. Next, rinse the tag with a disinfectant. Applicators must be cleaned (and disinfected when appropriate) between animals

1: Remove a tag from the strip and record its alphanumeric number. Be careful not to bend the tag from its original shape. Peel back only enough tape to remove one or two tags at a time. If more tape is removed, the tags are liable to fall off and become lost or damaged

2: With the piercing side of the tag up, place your index finger tip inside the bend of the tag. The piercing side of the tag has the numbers stamped into it (figs. **1** & **2**).

3: Hold the tag applicator pliers in the other hand, making sure the handle with the paint mark (or label) is up. Using your index finger, pull the tag straight back into the open jaws of the applicator pliers. A firm pull will be needed to completely seat the tag into its correct position. Take care not to squeeze the applicator handles before you are ready to apply the tag. If the handles are squeezed part way, and released, the bent tag will fall out, and will not function properly (fig. **3**).

4: Locate the correct site where the tag will be applied on the trailing edge (rear) of the front flipper. Ask for assistance holding the turtle still. Make sure to position the tag so there is some overhang after it is attached to the flipper (figs. **4** & **5**).

5: Apply the tag by squeezing the applicator handles firmly. The tag point will pierce the flipper and lock into place through the other tag end. The piercing tip must be bent over completely to lock tag. The handles of the applicator must be squeezed together **very firmly** at the final point in order to fully bend the point down.

6: Repeat the procedure in the same place on the other front flipper. All turtle should be double tagged. Try to use consecutive numbers on the same turtle whenever possible. If a tag is ruined, record the number of the ruined tag, and use another tag. If the recommended tagging site cannot be used, find another site on the rear edge of the front flipper.

Adapted from instructions by G. H. Balazs
MTRP,NMFS Pacific Islands Fishery Science Center,Honolulu, HI

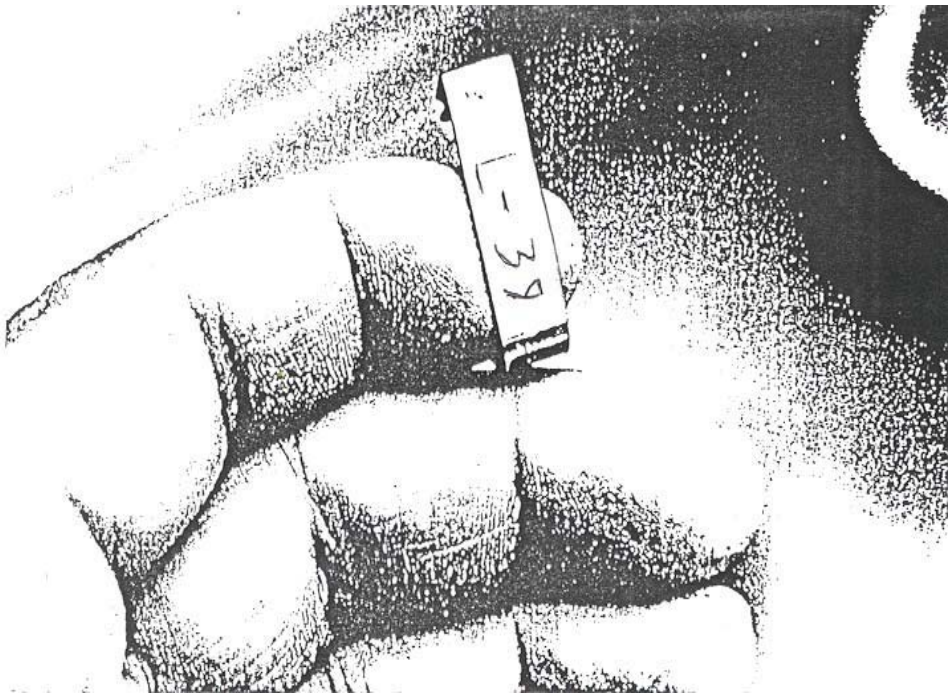


Figure 1. Holding a flipper tag in correct orientation to load into applicator. Note the numbered side of the tag is up.

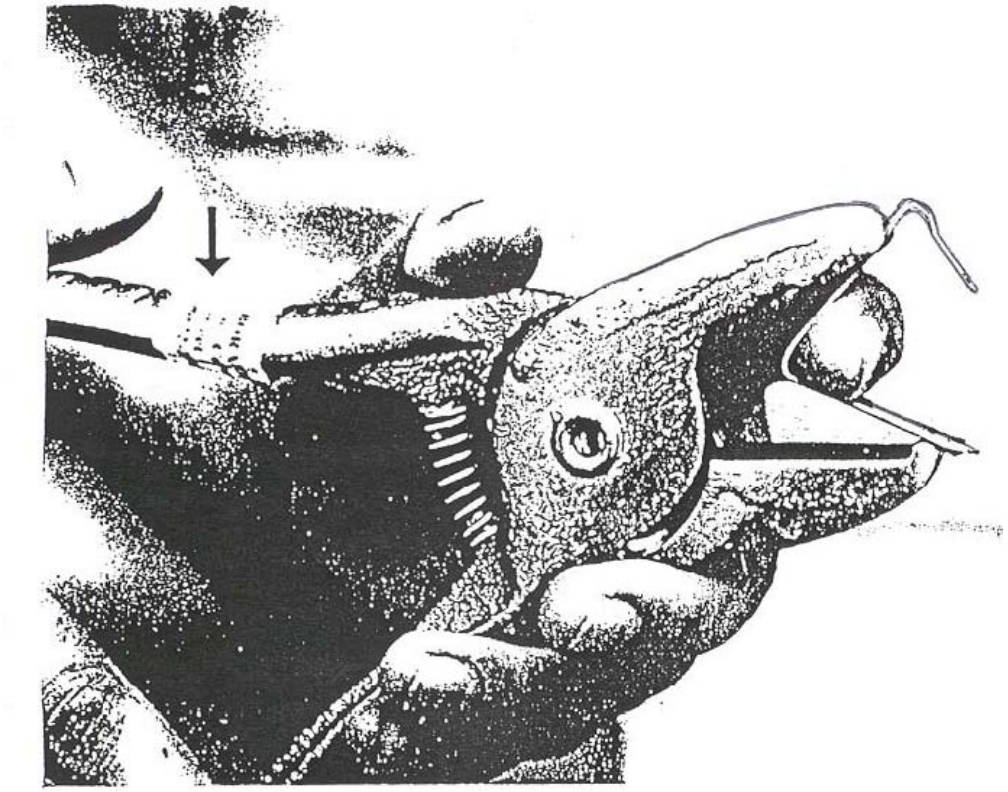


Figure 2. Loading a flipper tag into tag applicator. The arrow indicates which handle should be up.

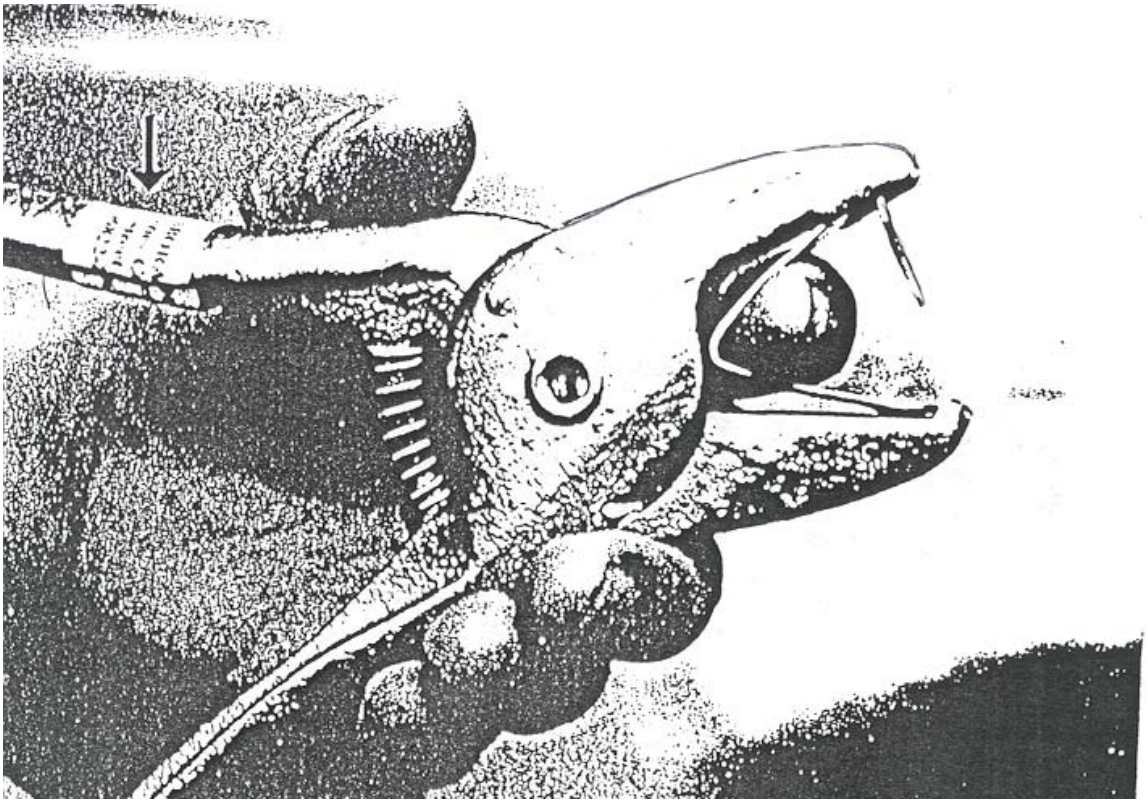


Figure 3. A fully seated tag in the tag applicator pliers.

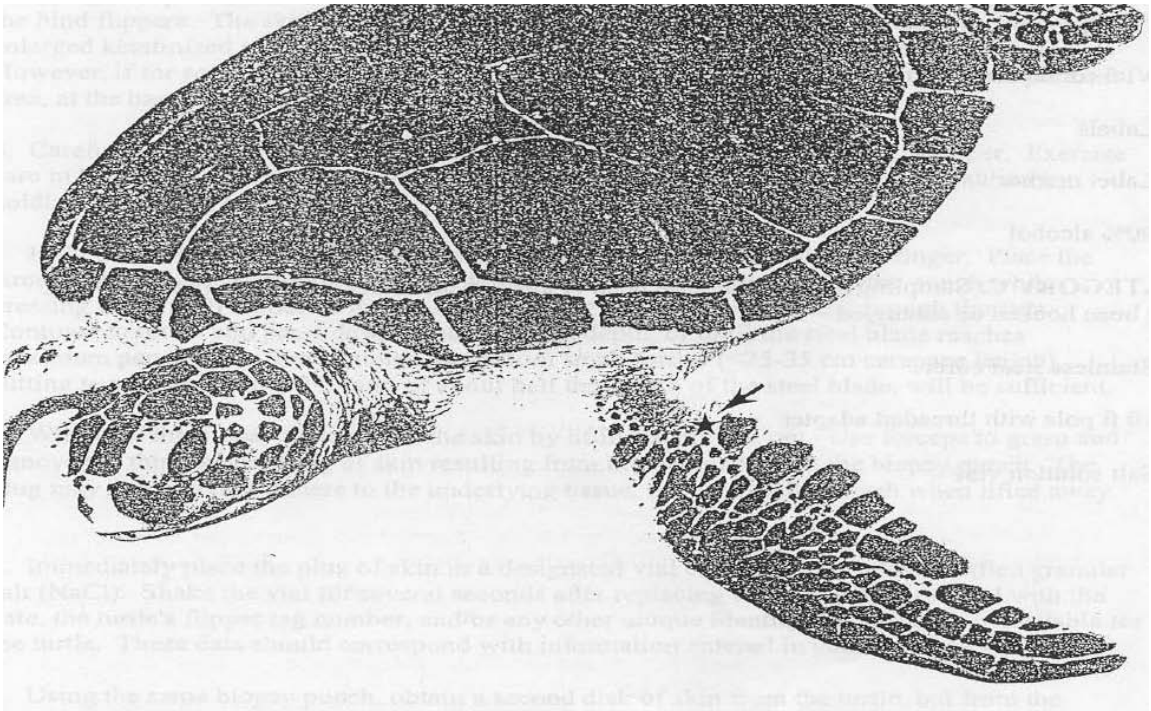


Figure 4. Arrow indicating the preferred location for flipper tag placement. The next preferred location is between the two large scales to the right of the arrow.

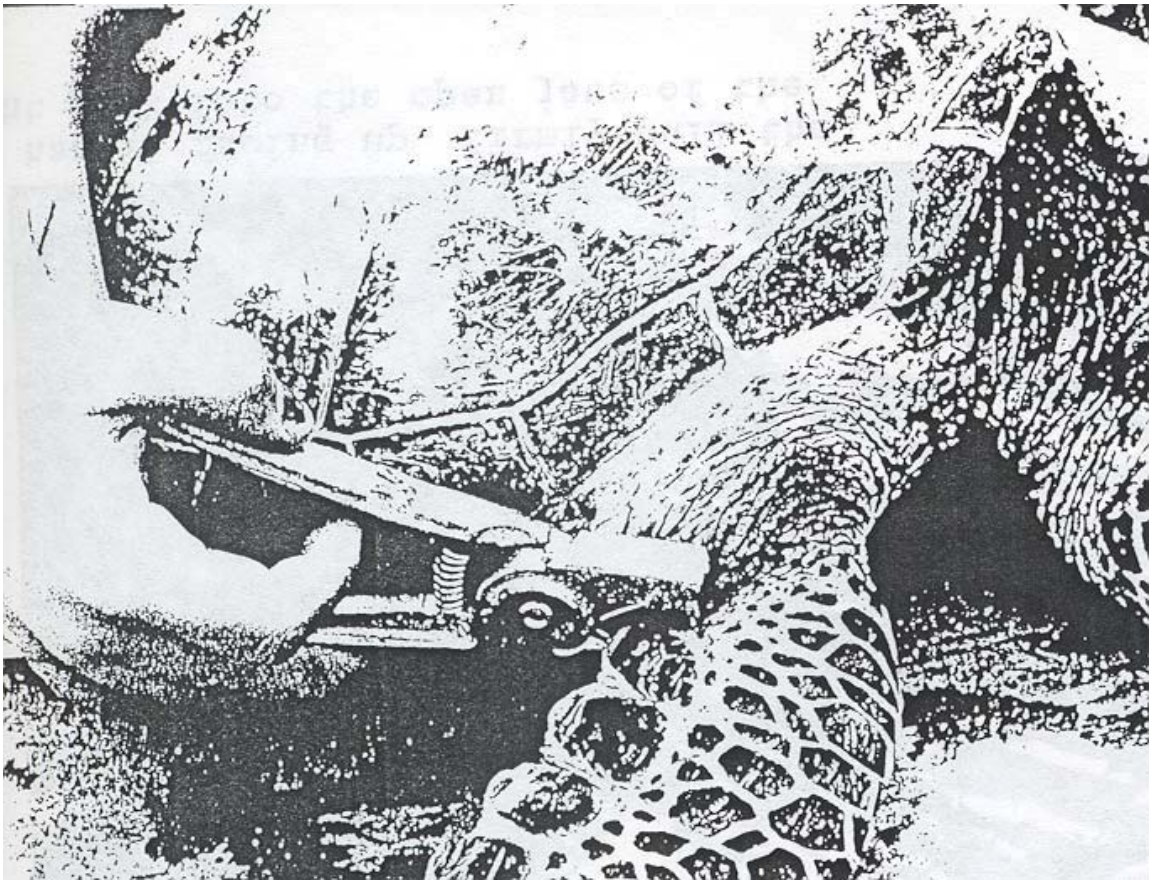


Figure 5. Applying flipper tag to a front flipper of a Green sea turtle. Note the slight gap between angle of tag and edge of flipper.

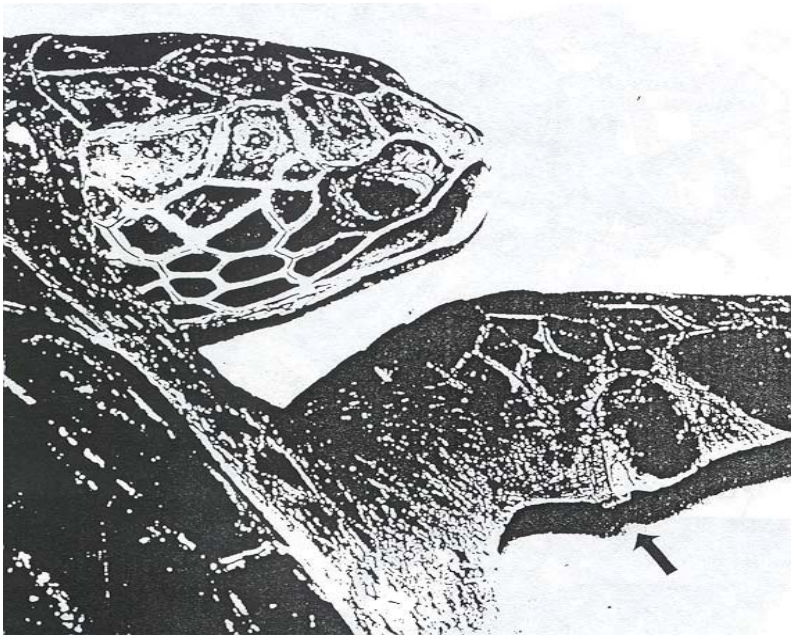


Figure 6. A properly applied flipper tag.

Procedure For Attaching Popup Satellite Archival Tags

The following is a detailed procedure for the attachment of PSATs on incidentally caught hardshelled sea turtles. Observers should follow all standard protocols for handling turtles that have been hooked or entangled.

Assessment:

Once on deck, guide the turtle to a safe area, preferably out of the weather and salt spray, make sure it is in an area where the turtle will have adequate ventilation around its head.. To calm the turtle place its head in a corner. Follow the protocols for obtaining the information for the *Sea Turtle Biological Data Form* and *Catch Event Log* as well as applying the metal flipper tags, collecting skin plugs, and photographs. Make sure the photo of the PSAT includes the ID label for the tag (either from the base plate or from stickers).

Preparation:

Identify a good position on the carapace to attach the PSAT. Flat and clean scutes toward the back of the carapace generally work best. (figure 1, page 121). Use freshwater to help clean the attachment area. Scrub away algae and remove any barnacles as best you can. Use sandpaper gently, for finer cleaning. Finally, wipe the area with a clean dry cloth.

Attachment:

Have all of your supplies (including watch) available. Make sure the carapace is clean and dry before beginning attachment procedures. Put on gloves and perform the following steps as quickly as possible.

1) Open the box of Marine Fix® Fast and put the contents from both containers (A and B) into the large plastic cup. Mix thoroughly for 90 seconds using the large wooden stirrer (figure 2, page 121).
2) Using the same stirrer, apply a thick coat of the mixed epoxy to the flat bottom part of the white base plate (figure 3, page 122).
3) Place against the carapace for a few minutes to squeeze out any air pockets. Be careful not to press down too hard that too much epoxy is pushed from under the baseplate. Smooth out the excess epoxy that oozes out of the sides with the stirrer or wet (gloved) fingertip. Wait approximately 30 minutes for the epoxy to harden.
4) Take a photograph showing the transmitter attached to the carapace (figure 4, page 122).

Release the turtle back into the water from as close to the surface as possible. Be sure to record the PSAT number, the position of release, and behavior of the turtle when released in the notes section of the *Sea Turtle Life History Sheet* and *Protected Species Tally Sheet*.

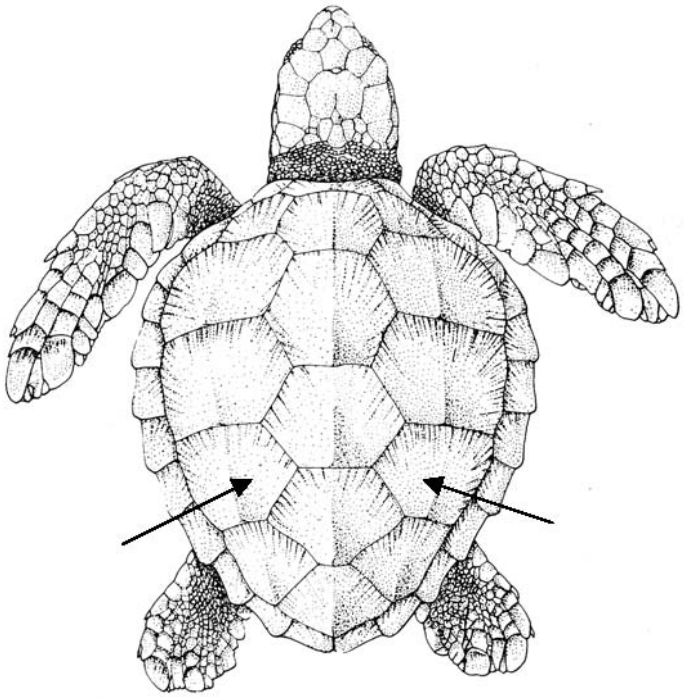


Figure 1. Attachment areas for PSAT

Figure 2. Mixing the epoxy compound. *Wear the latex gloves the handling The epoxy compound.*

Figure 3. Applying epoxy compound to PSAT baseplate.

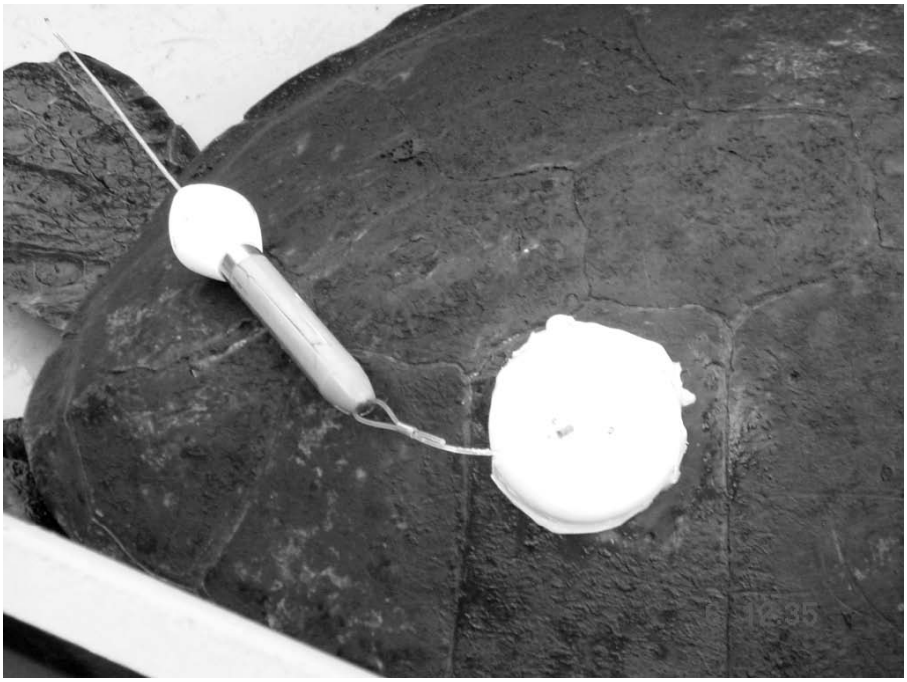


Figure 4. A properly attached PSAT.

Protocol For Collecting Sea Turtle Skin Biopsies

Category A: Sampling a live sea turtle brought aboard the vessel.

1. Turtles are always to be protected from temperature extremes of heat and cold, and kept moist during sampling. Place the turtle on a disinfected pad for cushioning. (Disinfect the pad again after use) The area surrounding the turtle should be made clear of materials that could be accidentally ingested.

2. Stabilize the turtle by turning it over and holding it still in a supine position. If available, a second person should provide assistance.

3. Using a disposable alcohol/or betadine swab, clean the skin region between the plastron and the base of the hind flippers. The skin in this area is normally soft and smooth, and devoid of hard or enlarged keratinized scales. Skin on the ventral side at the base of the hind flippers is the preferred area to biopsy. However, if for some reason it is not possible to sample this region, skin in the ventral pectoral area, at the base of the front flippers, may be used.

4. Carefully remove a new biopsy punch (Acu-Punch® brand) from its sealed wrapper. Exercise care in handling as the circular cutting end of this instrument is very sharp. Use caution by holding the cutting edge away from you and other persons at all times.

5. Hold the plastic handle of the biopsy punch [this is the hand held biopsy punch] using your thumb and index finger. Place the circular cutting end on the smooth skin dorsal of a hind flipper and rotate the punch while pressing down with moderate force. A circular cut will rapidly be made through the skin. Continue to rotate and press down to about 5-mm depth, or until the blade reaches maximum penetration. For samples taken from small turtles (<25-35 cm carapace length), cutting to a depth of only 2-3 mm, or about half the length of the steel blade, will be sufficient.

6. Withdraw the biopsy punch [this is the hand held biopsy punch] from the skin by lifting it straight out. Use forceps to grasp and remove the thin circular plug of skin resulting from the cut made with the biopsy punch. The plug may momentarily adhere to the underlying tissue, but will easily detach when lifted away.

7. Immediately place the plug of skin in a designated container (Whirl-pak™)containing purified granular salt (NaCl). Using another disposable alcohol/or betadine swab clean around and inside the region of the turtle from which the skin plug was taken. Shake the container for several seconds after placing the skin sample inside, to make sure the sample is covered by the salt. Label the container with the date, the turtle's flipper tag number, and/or any other unique identifying information available for the turtle. These data should correspond with information entered in your observer's logbook.

8. Using the same biopsy punch [this is the hand held biopsy punch], obtain a second

disk of skin from the turtle, but from the opposite hind flipper region. This should be accomplished by repeating the procedures listed in Steps 1-6. Place the second plug of skin in the same container (Whirl-pak™). Again, using another disposable alcohol/or betadine swab clean around and inside the region of the turtle from which the skin plug was taken. Store the container in a secure location reserved for valuable scientific specimens.

8. When both skin samples have been obtained, immediately return the biopsy punch [this is the hand held biopsy punch] to its protective wrapper and mark the package as "**USED"**. Return it to the PIRO Observer Programs for proper disposal. Additional new biopsy punches have been supplied to each observer; therefore, the same punch should not be used to obtain skin samples from another turtle.

The forceps used to grasp the skin plug must always be thoroughly cleaned of any adhering tissue and rinsed with 90% alcohol after each turtle is sampled.

9. The turtle should be released in an appropriate and safe manner after all pertinent data have been collected and the turtle has been tagged. No special treatment of the biopsy site is necessary prior to release. Slight bleeding may occur, but this will cease shortly after the turtle has been returned to the ocean.

Category B: Sampling a dead sea turtle brought aboard the vessel.

1. Follow the same protocol as described above for a living turtle (Category A, Steps 1-8).

2. Be certain that the turtle is, in fact, dead prior to freezing it for transport to a National Marine Fisheries Service Honolulu Laboratory. A comatose but live sea turtle may, in some cases, exhibit absolutely no movement or signs of life. In other cases, an unconscious turtle may show some evidence of eyelid or tail movement when touched. A turtle that shows no signs of life after 4 hours on deck (held in the shade where further damage to it won't occur) may be safely considered as dead.

Category C: Sampling a large sea turtle dead or alive in the water alongside the vessel that has been hooked or entangled.

1. The sampling gear consists of a 10' pole with a threaded adapter securely fixed to one end. The threads have silicon grease on them and are fitted with a protective rubber sheath that can be easily removed. Each pole comes with a corer. This is a small stainless steel cutting tool with prongs extending from the inner surface to entrap the tissue once coring has occurred. Each corer is stored in a small ziplock bag. The bag also contains a vial of salt (NaCl) solution.

2. When a large turtle is hauled in alongside a vessel and is available to sample, the corer should be threaded to the adapter. A forceful jab should be made to ensure full penetration by the corer. Suitable sampling sites include anywhere on the flippers,

shoulders, and pectoral and pelvic regions. The depth of the corers (1cm) is such that no permanent damage will result if a strike to the carapace is made. For leatherbacks, the somewhat soft nature of the carapace will allow sampling of tissue that will be entirely suitable for DNA analysis. We do not want the carapace targeted, but if a tissue core is taken from this area, the sample can be successfully used to extract DNA.

4. The corer should be unscrewed once the pole is brought back on deck. Care should be taken not to strike a crewmember while swinging the 10' pole aboard. Once unscrewed, the entire corer with tissue inside should be placed into the vial containing the salt solution and properly labeled. Do not attempt to remove the tissue from the corer. Only one sample can be collected with each corer.

From instructions by:

George Balazs
Marine Turtle Research Program
NMFS Pacific Islands Fishery Science Center

Sea Turtle Biological Data Form

Complete a Sea Turtle Biological Data form for every sea turtle observed caught (including entangled individuals). If a sea turtle is observed caught, but it is not landed, complete as much of the form as possible. For **unlanded** (are not brought on board) turtles you should complete at a minimum the following data elements:

1. Header information on the form.
2. Capture information block
3. Release information block.

Observer ID: In the upper right corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: The unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number.

Set Number: Record the set number from the Catch Event Log.

Species Code: Record the two-letter code from the Species Code list of the turtle captured.

Associated Log Forms: Place a checkmark or X in the box to indicate which additional log forms contain data associated with this turtle. If you mark a log form box, make sure to complete the information on the indicated log.

Catch Form Page Number: Record the page number from the appropriate Catch Event Log form.

Catch From Line Number: Record the line number from the Catch Event Log that contains information on the capture of this particular sea turtle.

Capture Information Block

Date of Capture: The date the turtle was caught. Use the standard date format (*e.g.* 24 JUL 2003).

Time of Capture : Record the time the turtle was landed. Use the 24-hour format.

***Position of Capture :**

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was landed. Record **N/S** in the last blank.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the animal was landed. Record **E/W** in the last blank.

Landed: Place a checkmark or X in the box to indicate that the turtle was landed. Landed means the turtle was brought on board the vessel. Leave blank if the turtle was not landed. **Describe the landing of the animal in the Comments Section.**

Tags Present: Record a Y, N or U to indicate whether tags were present on the sea turtle at the time of capture.

Release Information Block

Date of Release: The date the turtle was released. Use the standard date format (e.g. 24 JUL 2003).

***Time of Release :** Record the time the turtle was released. Use the 24-hour format.

***Position of Release :**

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was released. Record **N** or **S** in the last blank to indicate the hemisphere.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the animal was released. Record **E** or **W** in the last blank to indicate which hemisphere.

Disposition Code: Record the code corresponding to the fate of the turtle. In the comments section on the back, record specific notes about any damage to the turtle. Describe the behavior of the turtle when it was released. **Note:** If the initial condition of the turtle changes, then the final condition should be recorded. Record complete notes of the change.

- Sometimes an animal may be observed caught and then quickly released from the gear during hauling operations. In such cases, the Positions of Capture and Release can be the same. Just make sure the Times of Capture and Release are different.

Instructions for Reporting Sea Turtle Interactions

All sea turtle interactions should be reported immediately. The report should be with your issued satellite phone. When reporting sea turtle interactions, include the species, disposition, trip number, interaction date, the position, whether the turtle was hooked or entangled, and the severity of the hooking. For reporting the severity of the hooking, use the hooking categories on the Sea Turtle Biological Data Form. They are as follows:

01 - ingested, (in esophagus)	04-body/shell	07-leg/foot/rear flipper
02- head/beak/mouth	05-unknown	
03- wing/front flipper	06-tail	

Please include descriptive details about the hooking such as how the hook was removed or injuries to the turtle. Also, be prepared to provide the following information:

-Set number & date
-Number of hooks per float
-Date of the interaction
-Floatline length
-Hook number
-Number of lightsticks used on the set
-Total number of swordfish retained during the entire trip (including that set)

BLANK

Chapter 11 Seabird Biological Data Form

Introduction

The **S**eabird **B**iological **D**ata form is used for recording data from seabirds incidentally caught during longline fishing operations. These data will be used to determine the number, species, and the condition of seabirds involved in the longline fishery in the central Pacific. These data are critical to the development of conservation and recovery strategies.

Remember

Specimen collection and life history work are prioritized so if activity must be curtailed, the most important data and specimens have the highest probability of being collected.

The priorities of data & sample collection are as follows:

- Record sea turtle identifying characteristics, morphometric measurements, and tag data. Retain dead sea turtles after processing.
- Record seabird identifying characteristics and tag data. Retain dead seabirds after processing; leave any leg bands in place.
- Record marine mammal interactions and collect samples.
- Collect & record fish measurements.

General Instructions

Complete a Seabird Biological Data form for every seabird observed caught (including entangled individuals). If a seabird is observed caught, but it is not landed, complete as much of the form as possible. For unlanded seabirds you should complete at a minimum the following data elements: 1. header information on the form. 2. capture information block 3. release information block.

Complete a Seabird Biological Data Form for every seabird brought aboard. If you are not sure of what to record in any element leave the data field blank, and describe the situation with notes. **Take photographs of all unidentified seabirds that are caught.**

Data Elements

Observer ID: In the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: The unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number.

Set Number: Record the set number from the Catch Event Log.

Species Code: Record the three-letter code from the Species Code list, which corresponds to the species of the seabird in the code box.

Check boxes: Place a checkmark or X on the box for each type of additional documentation or information was collected form this specimen.

Catch Log Page No.: Record the page number from the appropriate Catch Event Log form.

Catch Log Line No.: Record the line number from the Catch Event Log that contains information on the capture of this particular seabird.

Capture Information

Date of Capture: The date the bird was landed. Use the standard date format.

***Time of Capture :** Record the time the bird was landed. Use the 24-hour format.

***Position of Capture :**

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was landed. Record **N/S** in the last blank.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the time the animal was landed. Record **E/W** in the last blank.

Landed: Place a checkmark or X in the box to indicate whether or not the bird was landed. Landed means the seabird was brought on board the vessel. Leaving this box blank means the bird was not brought on board the vessel. Describe the landing of the animal in the Comments section.

Release Information
Date of Release: The date the bird was released. Use the standard date format.

***Time of Release :** Record the time the bird was released. Use the 24-hour format.

***Position of Release :**

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was released. Record **N** or **S** in the last blank to indicate the hemisphere.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the time the animal was released. Record **E** or **W** in the last blank to indicate which hemisphere.

***** Sometimes an animal may be observed caught and then quickly released from the gear during hauling operations. In such cases, the Positions of Capture and Release can be the same. Just make sure the Times of Capture and Release are different.

Disposition Code: Record the code corresponding to the fate of the bird. In the notes section, record specific notes about any damage to the bird. **Note:** If the initial condition of the bird changes, then the final condition should be recorded. Record complete notes of the change.

Previously Dead [1]: The bird was already dead when it was captured/taken. This does not include seabirds that appear to have died as a result of the fishing operations.

Note: A **previously dead** seabird may have rotten tissue around the eyes and vents, and it may be bloated and foul smelling. It also may have sloughing skin and feathers.

Released Unharmed [2]: You observed the bird returned to the sea alive and unin-jured. This would apply to entangled seabirds that escape from the gear before landing.

Released Injured [3]: The bird was injured as a result of fishing operations, or by vessel personnel. "Injured" is an animal removed from the gear with obvious physical injury or with gear attached. A seabird that is hooked is considered injured. A seabird that was entangled and landed should be considered injured.

Killed Accidentally [4]: The bird died due to injuries incurred during fishing operations, or was returned to the sea while comatose.

Escaped [5]: You observed the bird leaving the gear or deck unaided after capture or entanglement, with no apparent injuries.

Treated as Catch [6]: The bird was not previously dead and was sacrificed for

market, table, or other use.

Other / Unknown [7]: The final fate of the bird involved in the set is unknown or whose condition after leaving the gear or deck was unobserved.

Hooking / Entanglement
Hooked/ Entangled: Answer **Y**, **N** or **U** for each element. Each box should be filled in independent of the other. A single bird will have two "yes" answers, if it was both hooked & entangled.

Hook/Entanglement Location: Select the code that indicates which part of the bird was hooked or entangled. Photograph the hook/entangled area, if possible and describe in the Comment section on the back of the form.

Gear Removal Code: Choose the code that best indicates how the animal was removed from the longline gear.

Remaining Gear: Select the letter code indicating what type of fishing gear, if any, was not removed from the bird. In the box below, describe what the type and amount (length) of gear left on the bird. If the bird is dead, photograph the remaining gear attached to the bird before wrapping it up for storage.

Morphology Block

Enter the appropriate code for each of these items; bill color, head color, and mantle color. If the tip of the bill is a different color than rest of the bill, write an X or checkmark in the box.

Light Devices Block

Complete these elements only if devices were used on this set, and the device type has been indicated on the gear configuration form.

Color Code: Record the code that best indicates the color of the light emitted by the device.
Code 8, Mixed is not a valid choice for this element.

Proximity Code: Select the code that shows how far away the next light device is from the branchline the bird was on.

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Chapter 12 Marine Mammal Biological Data Form

Introduction

The **M**arine **M**ammal **B**iological **D**ata form is used to record the biological data from any pinnipeds (seals) and cetaceans (whales & dolphins) incidentally caught during fishing operations. The information obtained is used to develop baseline data on marine mammal species for which little information is available. These data can be used to estimate age at sexual maturity, birth rates, feeding habits, life span and sex ratios. This data together with mortality and population abundance data can be used to ascertain whether changes in population abundance are due to fishing activities in the Pacific.

This marine mammal biological data is designed for volume specimen processing in the field, allowing the observer to write a minimum of information by checking off blocks in the upper "field" section of the form. The shaded blocks and lower portion of the form are for lab personnel use.

General Instructions

Complete a Marine Mammal Biological Data form for every marine mammal observed caught (including entangled individuals). If a marine mammal is observed caught, but it is not landed, complete as much of the form as possible. Try to get an estimated length of the animal.

Complete only the "**In Field**" portion of the form. Do not mark the shaded boxes.

Data Elements

Observer ID: In the upper right corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: The unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number.

Set Number: Record the set number from the Catch Event Log.

Species Code: Record the two-letter code from the Species Code list of the marine mammal captured.

Associated Log Forms: Place a checkmark or X in the box to indicate which additional log forms contain data associated with this marine mammal. If you mark a log form box, make sure to complete the information on the indicated log. If you catch a marine mammal at the very minimum you should have photos, sketch, and comments.

Catch Form Page Number: Record the page number from the appropriate Catch Event Log form.

Catch From Line Number: Record the line number from the Catch Event Log that contains information on the capture of this particular marine mammal.

Capture Information Block

Date of Capture: The date the marine mammal came up. Use the standard date format (*e.g.* 24 JUL 2003).

***Time of Capture :** Record the time the marine mammal came up. Use the 24-hour format.

***Position of Capture :**

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal came up on a hook. Record **N/S** in the last blank.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the animal came up on a hook. Record **E/W** in the last blank.

Landed: Place a checkmark or X in the box to indicate that the marine mammal was landed. Landed means the animal was brought on board the vessel. Leave blank if the animal was not landed. **Describe the landing of the animal in the Comments Section.**

Tags Present: Record a Y, N or U to indicate whether tags were present on the marine mammal at the time of capture.

Release Information Block

Date of Release: The date the animal was released. Use the standard date format (e.g. 24 JUL 2003).

***Time of Release :** Record the time the animal was released. Use the 24-hour format.

***Position of Release :**

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was released. Record **N** or **S** in the last blank to indicate the hemisphere.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the animal was released. Record **E** or **W** in the last blank to indicate which hemisphere.

Disposition Code: Record the code corresponding to the fate of the marine mammal. In the comments section on the back, record specific notes about any damage to the marine mammal. Describe the behavior of the animal when it was released. **Note:** If the initial condition of the marine mammal changes, then the final condition should be recorded. Record complete notes of the change.

> ***** Sometimes an animal may be observed caught and then quickly released from the gear during hauling operations. In such cases, the Positions of Capture and Release can be the same. Just make sure the Times of Capture and Release are different.

Disposition Code List

Previously Dead [01]: The marine mammal was already dead when it was captured/taken. This does not include animals that appear to have died as a result of fishing operations.

Note: A **previously dead** marine mammal will usually have rotten tissue, and it may be bloated and foul smelling.

Released Unharmed [02]: You observed the marine mammal get away from the gear on its own accord; in this instance it was probably not hooked and was not yet entangled in the gear .

Released Injured [03]: The marine mammal was injured as a result of fishing operations, or by vessel personnel. "Injured" applies to animals removed from the gear with obvious physical injury or with gear attached. Marine mammals that are hooked are considered injured. Marine mammals that are entangled should be considered injured too.

Died [04]: The marine mammal died due to injuries incurred during fishing operations.

Escaped [05]: You observed the marine mammal leaving the gear unaided after capture or entanglement, with no apparent injuries.

Treated as Catch [06]: The marine mammal was not previously dead and was sacrificed for market, table, or other use.

Other [07]: The final fate of the marine mammal is different from the above codes. Describe in Comments.

Unknown [08]: The final fate of the marine mammal was not observed. Explain in detail in the comments section why this was not observed.

Tags Removed & Tags Applied: Record a checkmark or X in the box to indicate if

tags were removed from or applied to the marine mammal. Tags should only be removed if they are unreadable or in danger of falling off. Salvage any tags you remove for return to port.

Hooking / Entanglement Block

Hook/Entangled: Answer each question Y, N, or U. A marine mammal can be both hooked and entangled.

Hook/Entanglement Location: Select the code that indicates which part of the animal the line was hooked & wrapped on. If more than one part is hooked or entangled, use the code indicating the part that had the most or most severe connection. Photograph the hook/entangled area, if possible and describe in the comments section.

Gear Removal Code: Choose the code that best indicates how the animal was removed from the longline gear.

Remaining Gear: Select the letter code indicating what type of fishing gear, if any, was not removed from the marine mammal. On the lines below, describe what type and amount (length) of gear left on the animal.

Female Block

Lactating: Is there any indication of lactation? Place a check in the box if you observe this. If the specimen is a male, leave this box blank.

Fetus Gender: Put an M or F in the box indicating the sex of any fetus 25-cm.

Fetus Length: Record in centimeters and tenths the length of any fetus 25-cm.

Curvilinear: If the length of the fetus was determined by a curvilinear measurement place a check in the box; if not then leave blank.

Measurements Block

Length: For cetaceans, record to the nearest centimeter, the length from the tip of the upper jaw to the notch of the tail fluke. For pinnipeds, record to the nearest centimeter, the length from the tip of the snout to the end of the tail.

Note: If the animal cannot be straightened out due to rigor mortis, record the curvilinear length along the animal's backbone.

Curvilinear: If the length of the animal was determined by a curvilinear measurement place a check in the box; if not then leave blank.

Girth: For cetaceans, record to the nearest centimeter the girth measured just anterior

to the leading edge of the dorsal fin. For N. right whale dolphins (*Lissodelphis borealis)* and pinnipeds, measure girth at the axilla, just posterior to the insertion of the flippers.

Flipper Length: For PINNIPEDS, record the distance in centimeters from the anterior insertion of the right rear flipper to the tip of the first toe.

Note: If the animal cannot be straightened out due to rigor mortis, record the curvilinear length along the animal's backbone.

Light Device

Complete these elements only if devices were used on this set, and the device type has been indicated on the Gear Configuration form.

Color Code: Record the code that best indicates the color of the light emitted by the device.
Code 8 (Mixed) is not a valid choice for this element.

Proximity Code: Select the code that shows how far away the next light device is from the branchline the marine mammal was on.

Identification:

Diagnostic Characteristics: Try to list five of the diagnostic characteristics you used to identify this animal in the comments section.

Sketch: Sketch the features you saw and used to identify this animal on the sketch log.

ADDITIONAL COMMENTS: Describe in as much detail as possible all tag information; tag type, number, address, color, and location on the animal. Also record any other facts that you think are important.

Cetacean Skin Biopsy Collection Protocol

Equipment:

Included in your sampling kit are:
(1) stainless steel coring tips (to be mounted on the pole)
(2) plastic vials containing DMSO (Dimethyl Sulfoxide) and NaCl solution.
(3) sample labels
(4) strips of Parafilm®
(5) a Sharpie® permanent marker
(6) pencil.

Preservative:

The preservative in the vials is 20% salt saturated solution of 20% DMSO. Avoid getting DMSO on your skin.

Methods:

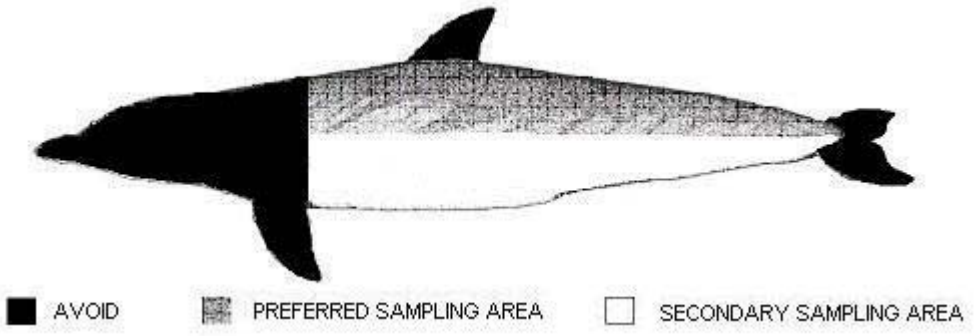
When an entangled or hooked marine mammal comes up, work with the crew to safely get the animal close enough to obtain a biopsy sample. If the animal is agitated and vigorously swimming around, it may be difficult to get the animal within range for sample collection. If there is a significant risk of injury to the crew, the animal, or you, do not attempt to collect the sample. This is especially true in the case of larger whales. **Use your best judgement, and remember, while each sample is valuable to researchers, safety comes first.**

Use your best judgement as to when during the disentanglement / dehooking process to take your sample. For example, you may have ample opportunity to gather a sample from a dead or seriously entangled animal. However, an animal that is just hooked may be very lively, and your opportunities will be limited. You should keep your sampling equipment readily available to you. Make sure that your sampling pole is not tied down during fishing operations and can be retrieved at a moment's notice. Keep your Marine Mammal Sampling Kit on deck with you (preferably, in your bucket).

Sample Collection:
Attach the stainless steel cutting tip to your sampling pole (turtle). Thrust the cutting tip into the dorsal surface of the animal **away from the blowhole** to collect a skin sample. If the marine mammal is dead, it is okay to use a gaff to maneuver the animal into position to get the sample. If the animal is very large, you can take the sample from the back, side, belly or tail stock.

Skin samples for genetic analyses can be collected from anywhere on the body of the cetacean. Avoid trying to sample from the dorsal fin, pectoral flippers or flukes. These regions are hard and it's difficult to cut the skin. The diagram below illustrates

the best areas to collect your sample from and the areas to avoid.



Once, you've collected the tissue sample, unscrew the tip from the pole and place it in the vial containing the DMSO/salt solution.

Labeling:
1) On the sample labels (*i.e.,* small pieces of bond paper), **use a pencil** to record the specimen number, species, and date collected. Insert the label into the vial with the sample.

2) Label each vial (cap and side of the vial) using the enclosed **Sharpie® Permanent Marker** with the specimen number and species name.

3) Tighten the cap securely, and wrap a strip of **Parafilm®** around the cap and the top of the vial. Stretch the **Parafilm®** as you wrap. This will prevent leaking while the sample is in transport.

4) Complete a Marine Mammal Life History Data Form with your specimen number, species identification (detail the characteristics used to make the ID), date collected and the position. A sketch or photo showing the entanglement and any obvious wounds would be very useful.

Guidelines for Disentangling Cetaceans from Longline Fishing Gear

Never enter the water in an attempt to disentangle the animal!

CAUTION: These instructions are provided to give guidance to observers encountering entangled marine mammals at sea, far from support or aid of outside personnel.

Disentangling marine mammals is a dangerous activity and should be undertaken with the utmost regard to personal safety!

Should an incident become difficult or dangerous to yourself or other vessel crew after initial attempts, **DO NOT** attempt any further disentanglement efforts; especially when dealing with actively struggling animals. As quickly as you can; document the incident as fully as your are able, collect a skin biopsy; if possible; and cut as much of the gear off the animal as possible.

Even, animals which appear dead or nearly so can suddenly sound (dive) or attempt to swim off, putting great stress on any entangling lines or gear.

Even if you were unable to remove all of the fishing gear from the animal, the information and/or samples you collected will do more good for the species, than risking life or limb to save the individual animal.

Disentangling marine mammals is a dangerous activity and should be undertaken with the utmost regard to personal safety!

9 Steps to take when disentangling cetaceans from longline gear.

1) Ask the crew to assist you by standing by with two pole gaffs.

2) Proceed cautiously and smoothly. Have the captain stop the vessel within close range and gently bring the animal alongside the vessel.

3) If there is a tangle, gaff the other side of mainline and attach it to the vessel or float. This is to isolate the vessel and the marine mammal from any tension on the remaining gear in the water. **This may be a good time to take a sample**. If possible, take a photo of the animal showing the entangling gear.

4) Do not attempt to bring a live marine mammal on board the vessel. You may cause serious injury to the animal.

5) Work tangle off the marine mammal as smoothly and quickly as possible. If the animal is alive, it is important to start unwrapping or cutting the **anterior (towards the head) most lines first.** If the vessel has a line cutter device (*e.g.* ALC or LaForce Line Cutter), use it to cut the lines. Avoid becoming entangled in bundles or loops of line attached to a live animal. The animal may suddenly dive, and cause serious injury or death by snagging clothing, a hand, a finger or other limb.

6) Avoid abrupt actions that may panic the animal.

7) When a hook is involved, if possible cut off the barb of the hook with long handled bolt cutters and remove hook. This may be nearly impossible on live animals in the water.

8) If hook removal is not possible cut the line as close to the eye of the hook as possible.

9) Remove as much line from the animal as possible. If it is not possible to remove all the line, make sure to describe what, how much, and where the remaining line is on the animal on the Marine Mammal Biological Data form. If possible take several photographs showing the entangled area and the remaining gear.

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Chapter 13

USFWS FORM 3-177 & CITES IMPORT FORMS

The **CITES Import Form** is required by the U.S. Fish & Wildlife Service to track the importation of protected species into the US and its territories.

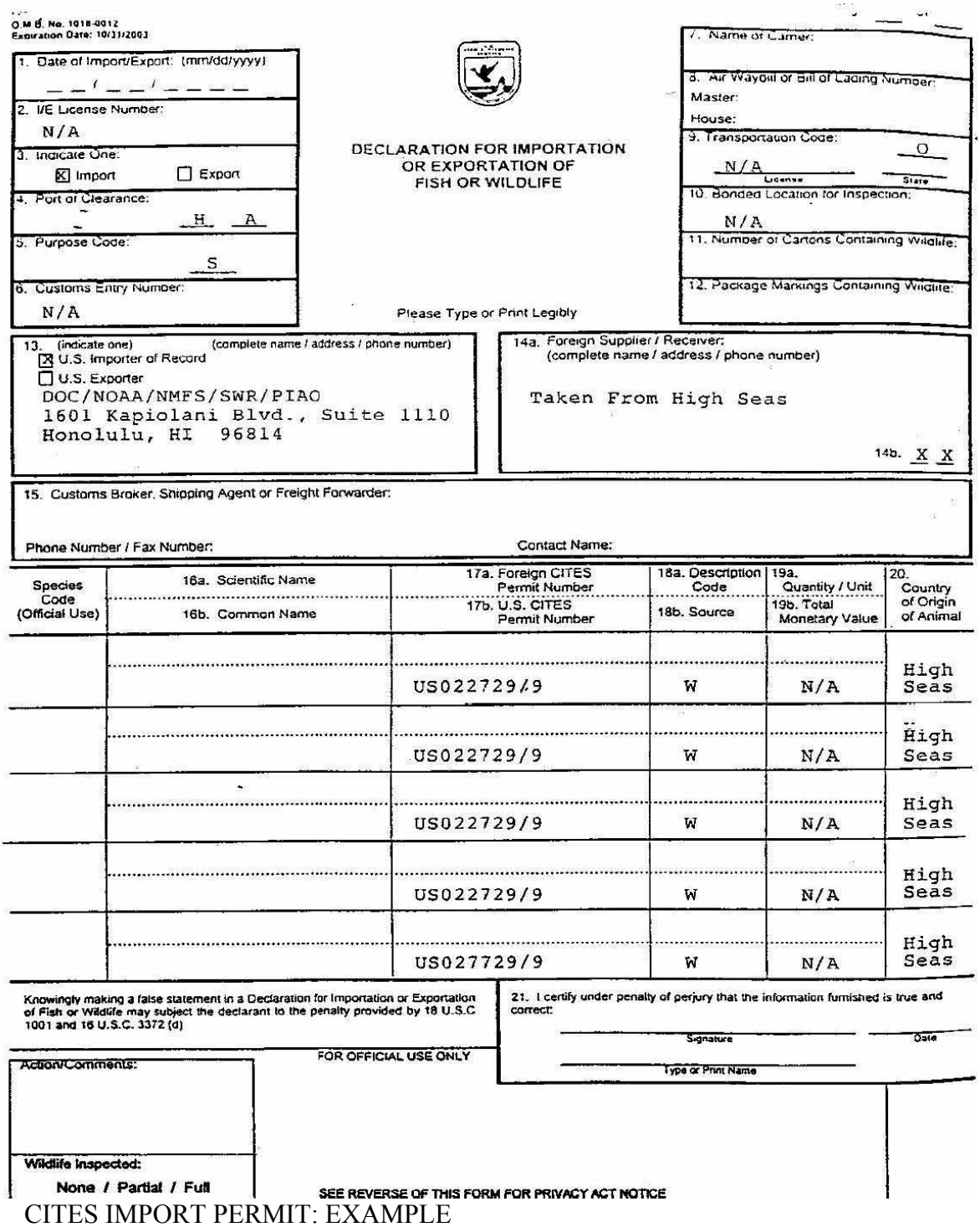
The **CITES Import** form should be completed as follows for each imported species. Refer to the example item 9 number of samples and /or number of whole carcasses.

Item 11: indicate the total number of animals from which specimens were collected.

Item 12: write **High Seas**.

When these forms are complete, put them in your data folder and notify your debriefer.

USFWS 3-177 : EXAMPLE



O.M.B. No. 1018-0012
Expiration Date: 10/31/2003

DECLARATION FOR IMPORTATION OR EXPORTATION OF FISH OR WILDLIFE

Please Type or Print Legibly

1. Date of Import/Export: (mm/dd/yyyy) __ __ / __ __ / __ __ __ __
2. I/E License Number: N/A
3. Indicate One: [X] Import [ ] Export
4. Port of Clearance: H A
5. Purpose Code: S
6. Customs Entry Number: N/A
7. Name of Carrier:
8. Air Waybill or Bill of Lading Number: Master: House:
9. Transportation Code: O — License: N/A — State:
10. Bonded Location for Inspection: N/A
11. Number of Cartons Containing Wildlife:
12. Package Markings Containing Wildlife:

13. (indicate one) (complete name / address / phone number)
[X] U.S. Importer of Record
[ ] U.S. Exporter
DOC/NOAA/NMFS/SWR/PIAO
1601 Kapiolani Blvd., Suite 1110
Honolulu, HI 96814

14a. Foreign Supplier / Receiver: (complete name / address / phone number)
Taken From High Seas
14b. X X

15. Customs Broker, Shipping Agent or Freight Forwarder:
Phone Number / Fax Number: Contact Name:

Species Code (Official Use)	16a. Scientific Name / 16b. Common Name	17a. Foreign CITES Permit Number / 17b. U.S. CITES Permit Number	18a. Description Code / 18b. Source	19a. Quantity / Unit / 19b. Total Monetary Value	20. Country of Origin of Animal
		US022729/9	W	N/A	High Seas
		US022729/9	W	N/A	High Seas
		US022729/9	W	N/A	High Seas
		US022729/9	W	N/A	High Seas
		US027729/9	W	N/A	High Seas

Knowingly making a false statement in a Declaration for Importation or Exportation of Fish or Wildlife may subject the declarant to the penalty provided by 18 U.S.C 1001 and 16 U.S.C. 3372 (d)

21. I certify under penalty of perjury that the information furnished is true and correct:
Signature — Date
Type or Print Name

FOR OFFICIAL USE ONLY

Action/Comments:

Wildlife Inspected: None / Partial / Full

SEE REVERSE OF THIS FORM FOR PRIVACY ACT NOTICE

CITES IMPORT PERMIT: EXAMPLE

FORM 3-201A (1/97)

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

IMPORT PERMIT

Page 1 of 1

1. Original Permit/Certificate No.
01US022729/9

2. Valid until
05/28/2002

3. Permittee (name and address, country)
NATIONAL MARINE FISHERIES SERVICE SOUTHWEST REGION
501 WEST OCEAN BOULEVARD
SUITE 4200
LONG BEACH, CA 90802-4213

4. Consignee (name and address, country)
DOC/NOAA/NMFS/SWR/ PIAO
HAWAII LONGLINE OBSERVER PROGRAM

5. Special Conditions
- MUST COMPLY WITH ATTACHED GENERAL PERMIT CONDITIONS.
- U.S. ENDANGERED SPECIES (50 CFR 17.22).
- PERMIT MAY BE COPIED FOR MULTIPLE SHIPMENTS; PERMITTEE TO RETAIN ORIGINAL.
- A COPY OF THE ANNUAL REPORT AS REQUIRED UNDER NMFS/ESA PERMIT No. 1190 SEC.C 1. MUST BE SUBMITTED PRIOR TO RE-ISSUANCE OR UPON THE EXPIRATION OF THIS PERMIT WHICHEVER OCCURS EARLIEST.
- PERMITTEE MUST COMPLETE BLOCK 11 AND SHIPMENT #:_____, PRIOR TO EACH SHIPMENT.
- THIS RE-ISSUES AND AMENDS 00US022729/9 ISSUED 5/12/2000.

5a. Purpose of Transaction
S

5b. Security Stamp No.
U592 60 199

6. U.S. Management Authority

OFFICE OF MANAGEMENT AUTHORITY
U.S. FISH AND WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR
WASHINGTON, D.C. 20240
UNITED STATES OF AMERICA

May not be used for commercial purposes. -For live animals, only valid if the transport conditions comply with the CITES Guidelines for Transport of Live Animals or, in the case of air transport, with IATA Live Animals Regulations.

05/29/2001
Issuing Date

United States Management Authority

AUTHORITY: Endangered Species Act of 1973 (16 USC 1531 et. seq.)

7/8. Common Name and Scientific name (genus and species) of Animal or Plant	9. Description of Part or Derivative, including identifying marks or numbers (age/sex if live)	10. Appendix No. and Source
A. Common Name GREEN SEA TURTLE Scientific Name CHELONIA MYDAS	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 20.	10. 1 W 11. Quantity (including units) 12. Country of Origin
B. Common Name LEATHERBACK SEA TURTLE Scientific Name DERMOCHELYS CORIACEA	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 50.	10. 1 W 11. Quantity (including units) 12. Country of Origin
C. Common Name LOGGERHEAD SEA TURTLE Scientific Name CARETTA CARETTA	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 300.	10. 1 W 11. Quantity (including units) 12. Country of Origin
D. Common Name HAWKSBILL SEA TURTLE Scientific Name ERETMOCHELYS IMBRICATA	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 20.	10. 1 W 11. Quantity (including units) 12. Country of Origin
E. Common Name OLIVE RIDLEY SEA TURTLE Scientific Name LEPIDOCHELYS OLIVACEA	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 20.	10. 1 W 11. Quantity (including units) 12. Country of Origin

Specimen(s) will not be used for primarily commercial purposes. The recipient has suitable facilities to house and care for the specimen(s).

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Chapter 14 Specimen Log

The **S**pecimen **L**og is a record of all specimens & samples collected by an observer during a cruise. Fill out as many forms as needed. Refer to current circular updates to see required specimens other than protected species.

The header of the form contains the Observer ID number, Trip No. and Specimen Log page number.

Date: Enter the date the specimen was collected. This is usually, the same as the date the Set was hauled.

(This) Forms Page & Line Number: The page number that appears at the top of this form. The line number is pre-filled.

Set: Enter a two-digit number indicating the set that the specimen was collected from. If a specimen was collected while the vessel was not engaged in fishing operations leave blank and describe the situation with notes.

Catch Form, Page & Line Number: The form type is pre-filled with the code for Catch Log. Enter the Page & Line no. from the Catch Log that contains the data on the animal from which the specimen was collected from.

Specimen Code: Enter the single letter code that indicates the type of specimen was collected. Refer to the code chart on the left margin on the form.

Specimen Type: The English term for this specimen type. For example specimen code D would have DNA plug written in this box.

Content Description: General comments about this specimen. Include either the Species Code or English common name of the organism from which the sample(s) were collected.

Collection Purpose: Explain the reason the specimen was collected. The two common reasons are research request and ID confirmation. If there is an unusual reason for collecting the specimen, explain with notes on the comment section of the form.

Specimen Delivered To: To be signed by the requesting party. This is handled by PIRO staff or the observer contractor.

At the end of each cruise, check each specimen label and match it on the Specimen Log to ensure the specimen numbers and contents are correct.

Specimen Numbering System

Each sample or specimen collected by an observer will have a unique 12 character specimen number assigned to it. This number, the specimen number, is composed of the *Trip Number*, *Set Number*, *Catch Log Form Page Number*. and *Catch Log Form Line Number*. Label each sample and record the information on the Specimen Log.

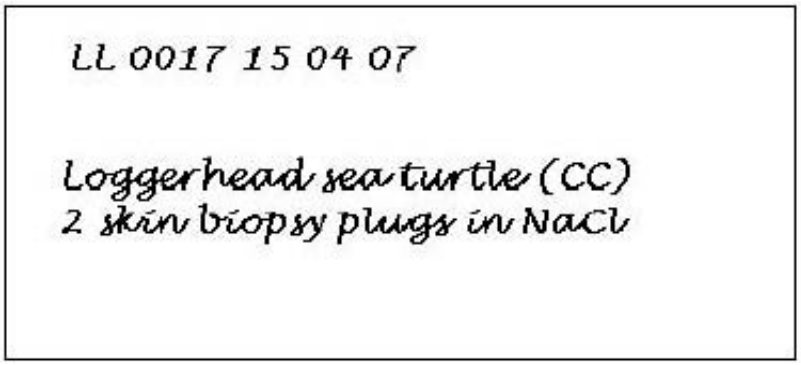
When filling out a specimen tag, include the following:

- Specimen number
- Species common English name
- Species code
- How the sample was stored

See the two examples below.

Example Specimen Tags

Example 1. Loggerhead sea turtle on Trip # LL0017. Set 15, Catch Log Form page 04, line 07.



The specimen number for example 1 is **LL0017150407**

Example 2. Shortfin Mako shark on Trip # LL7745. Set 03, Catch Log Form page 02, line 13.

The specimen number for example 2 is **LL7745030213**

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Chapter 15 Tag Data Form

The **T**ag **D**ata **F**orm is a record of data on every tag recovered or deployed during a tip. The recovery of tagged animals is rare. The information from a recovery is very important to researchers and resource managers in several agencies.

Fill out the header information with the appropriate data. Fill out a separate form for each tag encountered on an animal.

Species Code: Enter the two letter or three-digit species code.

Tag Event Type: Select AP, RC or RM to indicate if a tag was Applied (AP), Recovered (RC) or Removed (RM). Describe the reason for removal in the comments section of the form. **Note:** Only remove tags from animals if they are in danger of falling off or are unreadable.

> ►If a sea turtle is captured and it already has flipper tags on its front flippers; **leave them in place**. Fill out a Tag Data Form for each tag recovered, and another one for each of the flipper tags you place on the flippers.
>
> ►If a banded, dead albatross is encountered and it is salvaged (brought on board and saved) during longline fishing operations; leave the bands in place on the bird's leg.

Tag Number: Fill in the boxes with the number-code on the tag. Make sure the sequence matches what is on the tag. Different tags may have different mixes of letters & numbers; E-770 is not the same tag as 770-E.

Tag Type Code: Select the code from the reference table that indicates the type of tag encountered. If you are unsure of the type of tag, draw a picture and take a photograph of the tag against a white or neutral colored background.

Tag Location Code: Select the code for where the tag was attached to the animal's body.

Tag Material Code: Enter the code for the material the tag is constructed of. Inconel is the type of metal used for the sea turtle flipper tags. Some tags routinely placed in fish or sharks are made of wire with a plastic sheath. Consider these tags as made of plastic.

Tag Color Code: Select the code for the color of the tag. If the tag looks like it was faded, record the color of the tag as it appears now, not what you think it may have been. Many tagging programs maintain a set of originals and a set that have been exposed to the environment. A tag that was originally red can fade to a pink-ish color, but not be the same color "pink" as a tag that was originally pink.

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Chapter 16 Photographs and Photo Log

Photographs

Cameras are to be used for pictures of sea turtles, birds, fish, or marine mammals. All unidentified items (i.e.: animals, damage, gear) should also be photographed. Photograph specimens on deck or at close range when they are out of the water. Photograph ***all*** incidentally caught sea turtles, birds and marine mammals. Compose photographs so that the vessel identity and crew remain anonymous.

When taking a photograph with the sun at your back, make sure to frame the photo so that shadows do not fall across the subject. Avoid direct mid-day sun. Photograph the left side of fish. For sea turtles, it is useful to place a label near the subject to help identify it. Include the specimen number and species name in large block letters on a piece of paper. If it is not possible to include this label with the subject, then immediately preced-ing that photograph, compose a picture that contains the appropriate label only.

Place the specimen and a meter stick or other object for scale against a plain contrasting background. Orient the camera perpendicular to the specimen to obtain a full side view and fill the viewfinder with the specimen, then take the picture. Use "Macro" setting to capture close ups of specific ID characteristics (finlets, lateral lines, etc.).If the animal is too large to fit in one frame, take a shot of the head with the front half of the body, and another of the rear half of the body. For fast moving species (like bowriding mammals), photograph with high speed setting, and take video clips when needed. As a guideline, 10-20 seconds should be adequate video footage to identify members of a pod, but use your discretion keeping in mind memory space. Do not delete photos, but should memory space become an issue, you may review your photos and delete poorly developed shots (as in flash white-outs and too dark shots). Your camera is issued with a travel charger, and it is recommended to charge your battery nightly. The underwater camera housing should be rinsed nightly, and soaked for 10-15 minutes at the completion of each trip. The entire camera is to be brought in during debriefing; it is part of your data!

Digital Cameras

- The care and maintenance of these cameras are the observer's responsibility. Always keep the camera in the provided housing to protect it from the elements. **Underwater camera housing should be rinsed nightly and soaked (with the camera inside so it will be submerged and not float), for 10-15 minutes at the completion of each trip.** The camera is to be brought in your first day of debriefing; it is part of your data!

- **The Basics;**
  Remove battery from camera and charge, light is red when charging, green when fully charged
  Open the lens cover, set the shooting mode dial to AUTO

  Resolution and compression should be set at M2, superfine. Do this by pressing function button, arrow down to bottom icon then press arrow right to M2, hit set button (middle one) and arrow right again to superfine icon, press set again

  Aim camera, use zoom if needed and LIGHTLY press the shutter button to halfway focus (two beeps will sound and the AF frame on monitor appears green when in focus)

  Press the button all the way down—there will be a delay, do not remove camera until you hear the shutter sound.

- **Continuous Shooting;** Ideal for protected species sightings
  Change shooting mode dial to the "runner" for fast shutter speed
  Hit function, arrow down to the empty box, hit set button

  Arrow right to the multiple box icon without the H. Hit Set. This one provides 1.5 shots per second, where as the multiple box icon with H shoots 2.0 shots per second.

  Press shutter button halfway to lock focus, then press completely down. Shooting will stop when shutter button is displayed.

- **Movie Mode;** Keep in mind this option requires a lot of memory
  Change shooting mode dial to the movie, camera icon--- lower right hand corner displays the maximum recording time (in seconds) available.

  Press shutter button all the way down, red circle appears in the upper right corner

  To end—press shutter button.

Personal photos are allowed, if they do not identify the vessel or crew. Scientific pictures take priority over personal photos. Copies of personal photos will be made available upon request. You will have to supply your own CD's.

The following subject views are helpful in identifying animals:

a. Left Side view (showing dorsal fin if fish, shark, or marine mammal)
b. Dorsal view
c. Ventral view
d. Top of head, close up (macro setting)
e. Bottom of head, close up (macro setting)
f. Tail flukes, top & bottom
g. Any ID characteristics, close up (macro setting)

Avoid oblique angled shots or direct head on views. They may make interesting photos, but they are usually useless for identification purposes.

*Scale objects:

- yard/meter stick
- measuring tape
- tool (deck knife, ice shovel, butcher saw)
- pencil/pen/coin for close-up shots

* line, lumber or deck hoses are bad, because it is often hard to determine their dimensions from the picture.

Check the photos box on the Catch Log and make sure to record the camera and frames on the Photo Log.

In order to verify the identification of fish, please take a photograph of each species seen during your first three trips. When possible, photograph juvenile tunas as examples of the species instead of adults.

Problematic Species to Identify

Please try to photograph the following species if you think you have encountered them. They may be rarely encountered in this fishery or are difficult to identify in the field.

Sharks: a. Common thresher b. Longfin mako
c. Black-tip shark d. Cookie cutter
e. Salmon shark f. Galapagos shark
g. Sand tiger, any species h. Megamouth

Rays: a. Mobula b. any ray with a WHITE ventral side.

Billfish*: a. Black marlin b. any unid. Billfish

Bony Fish: a. Scabbardfishes b. King-of-Salmon
c. Pompano dolphinfish d. Cutlassfishes
e. Short-nose lancetfish f. Ribbonfishes
g. Hammerjaw h. Bluefin tuna
i. Longfin escolar j. any unid. Fish
k. Roudi's escolar

* Special notes for photographing billfish. Take a photo of the head, from one side, showing the dorsal fin held erect. Take a photo of the caudal peduncle (tail stock), from one side, showing the insertion of the second dorsal & second anal fins. Often billfish are too large to fit in a single frame of a photo. Try to photograph the entire body of the fish by taking one shot of the front half of the body and a second of the rear half of the body.

Photo Log

The **P**hoto **L**og is a record of photos taken by an observer during the cruise. It is used to match the photos to the data during the debriefing. All photos will be reviewed by the observers and their debriefers together.

A separate Photo Log should be filled out for each trip. One line should contain all the photos of a single subject. State the number of pictures in the description.

Date: Enter the date the photo was taken.

Set: Enter a two-digit number indicating the set that the subject was captured.

Form: Enter the two letter code from the Form Code reference chart on the left edge of the form.

Page & Line Number: Enter the Page & Line no. of the form that refers to the subject of the photo.

Camera Number: Enter your longline trip number (i.e.: 9999)

Frame Number: Leave the frame number blank; this will be filled in during the debriefing process.

Photo description: A few key words, specimen ID number or short sentence that briefly describes the photo. Also note how many photos were taken of the subject.

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Chapter 17 Sketch Log

The **S**ketch **L**og is provided as a place for observers to draw sketches of animals for ID purposes, or gear configurations. This form should not be confused with the ID

Sketch forms you may be issued during your first 2-3 trips.

Complete the boxes for Observer ID number,Trip number and Date.

Assoc. Form: Use the two-letter code for the form that the sketch pertains to.

Page & Line Number: Fill in the page and line number of the form that contains the information the sketch is related to.

Sketch Caption/Short Description: A short sentence or key words describing the subject of the sketch. Once scanned, this will be used as the title of the image.

Long Description: Use this area to describe characteristics that you are trying to portray in your sketch.

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Chapter 18 Satellite Phones and Radio Reporting Instructions

Introduction

The **L**ongline **R**adio **R**eporting worksheets have been developed to provide observers with the means to provide departure/arrival data and specimen collection information to shore-side personnel, as well as to report difficult situations, harassment, or assault while on a vessel assignment

The reporting worksheet consists of four code boxes. The box in the upper right hand corner is completed by the Operations Coordinator and contains cruise information, giving the observer name, vessel name, call sign, and cruise number.

The box at the right center of each worksheet contains five personal status codes. Each code describes your treatment by vessel personnel, and how it is affecting your work. The status codes are not for reporting medical conditions (re: sea sickness).

The following definitions describe the five personal status codes.

Code 0: I'm OK - Work OK

"The situation aboard the vessel is acceptable. I am being treated with appropriate courtesy, according to my understanding of the position."

Code 1: I'm OK - Work Rough But Workable

"The situation aboard the vessel is somewhat deteriorated. I am meeting resistance to my duties. I am, however, confident that I can complete my assignment."

Code 2: I'm OK - Work Not OK But Workable

"The situation aboard the vessel is poor, some of my duties have been compromised. Because of difficulties obtaining specimens or positions, or use of the radio, there may be a need for enforcement to review my trip upon my return. I have some doubts that this assignment can be successfully completed."

Code 3: I May Not Be OK - Work Not OK

"The situation aboard the vessel is unbearable, I feel that to continue my duties would be a personal risk. I request that an enforcement agent be available for debriefing as soon as possible upon my return. I am being threatened and/or harassed."

*** * * Incidents of sexual harassment warrant a Code 3 * * ***

In this instance, the agency will take steps to have a NOAA

enforcement agent present when the vessel returns to port to investigate the situation.

Code 4: I'm Not OK - Work Not OK Situation Severe

"I have suffered an assault, PLEASE make every effort to remove me from this vessel at the earliest possible time. Notify all appropriate authorities so that they can assist me."

In this instance, the agency will take steps to involve NOAA enforcement personnel, the Federal Bureau of Investigation, and the United States Coast Guard. An evacuation will be arranged or the vessel will be asked to return to port.

As soon as you can, take your EPIRB outside, and turn it on. Once on, stow it somewhere and leave it on.

General Instructions

As you prepare the weekly radio report for transmission to the PIRO Observer Program, assess your situation aboard the vessel. Using the number assigned to the code type that best describes the situation aboard the vessel, fill out the status box in the radio-reporting matrix.

0 = I'm OK, Work OK;
1 = I'm OK, Work rough, Workable;
2 = I'm OK, Work not OK, Workable;
3 = I may not be OK, Work not OK; and
4 = I'm not Okay, Work not OK.

Your status code will be transmitted along with your weekly radio report. The captain is to be apprized of the codes and their meaning prior to each transmission.

During decoding of the report, your status will be determined and appropriate action taken. If the Hawaii Observer Program does not receive a scheduled radio report, from either the SSB radio or from a commercial high seas radio-telephone service by Wednesday, close of business; the vessel owner or designated agent will be requested to contact the vessel, for the observer's report.

Note: If for any reason it is not possible to contact the Hawaii Observer Program directly, the observer should request that the radio report and a message be relayed through a nearby fishing vessel or by fax when feasible.

Remember, any instance of intimidation, harassment or interference is to be reported to the captain as soon as possible and documented in your Documentation Notebook.

At the bottom of the worksheet in the Radio Reporting Summary block, summarize your radio transmissions, whether you make contact or not. Record the date, time, frequency, and notes regarding the transmission.

The box in the upper left-hand corner of the worksheet is the radio-reporting matrix. This block consists of five rows and four columns. Each column is labeled: **A**, **B**, **C**, **and D.** Each row will receive a number that indicates the sequence in which the rows are to be transmitted. The information encoded in the radio reporting matrix will include your status code, departure date and time, the type of specimens collected, and estimated date and time of arrival. The shaded areas are scramble boxes. Any number may be entered in these boxes to help disguise the encoded data.

Complete the radio-reporting matrix from top to bottom using numbers **0** through **9**. Begin by recording the one digit number in the status square that best reflects the situation aboard the vessel.

Next fill in the "DEP / ARR" box to indicate if the dates & times are Departure or Arrival information. When making a mid trip radio report, fill in the DEP / ARR box with 3 for Mid-trip.

Complete the departure date using two digits for the month (**01** through **12**) and two digits for the day (**01** through **31**).

Use the 24-hour clock when recording the departure time. Use two digits for the hour (**00** through **24**) and two digits for the minutes (**00** through **59**). The squares are labeled; "DEP / ARR MONTH", "DEP /ARR DAY", "DEP / ARR HOUR" and "DEP / ARR MINUTES."

Fill in the shaded squares with random numbers, 0-9. To avoid confusion, avoid using the same number to fill in the squares. Over the SSB radio, it is sometimes difficult to distinguish between the numbers like "111" and "1111".

On subsequent reports, unless there is a port stop, record a number greater than "**2**" in the first square of the "DEP / ARR MONTH" and "DEP / ARR HOUR" blocks to indicate that there are no changes to report. It is important to notify the Port Coordinator and the Observer Program office by telephone whenever the vessel makes a port stop.

To report specimens use the following codes:

0 = None
1 = Whole animal
2 = Skin plug (for mtDNA analysis)
3 = Skin plug & Whole animal
4 = Other parts

In order to facilitate the recovery of specimens at the docks, record the estimated date and time of arrival in the respective code boxes. If you do not know the scheduled arrival time or date, be sure a number greater than "**2**" is used in the first square of the "DEP /ARR MONTH" and "DEP /ARR HOUR" boxes to indicate that no information is available. Any number may be used in the subsequent squares as long as a number greater than "**2**" is used in the first square of the Departure/Arrival

boxes. Remember, numbers should be used that make it more difficult to decipher the radio-reporting matrix. Always prepare new numbers for each transmission. Never communicate that your report is the same as last time and avoid using a single repetitive number for all boxes.

►NEVER USE the common name of ANY protected species that have been caught or entangled during a cruise when talking on the SSB (to Honolulu or other observers).

PIRO Observer Programs maintain a Single Side Band (SSB) high seas radio base station in Honolulu, Hawaii. The base station call letters are **KWL 48** (**K**ilo **W**hiskey **L**ima). This is a Federal Communications Commission (FCC) station licensed for international use. Users must comply with FCC regulations.

Three channels are monitored daily Monday through Friday, except holidays. The following schedule is for Hawaii Standard Time.

Channel	Frequency	Time Schedule
Channel 8A.	**(8.294.0 MHz).**	**0800 to 0900 hours**
Channel 12A.	**(12.353.0 MHz).**	**0900 to 1000 hours**
Channel 16A.	**(16.528.0 MHz).**	**1000 to 1500 hours**
Channel 12A.	**(12.353.0 MHz).**	**1500 to 1630 hours**

Radio reports are to be made weekly on **Monday**. To initiate a call, arrange with the captain to call KWL-48 Honolulu using the SSB radio. Some vessel operators may prefer to call the data in for the observer. This is acceptable but you should be standing by to ensure its accuracy and in case there are questions or messages. If you do not get through on your first try, try two more times, waiting a couple of minutes between calls. If still no contact, try again later in an hour or two. If you do not get through on Monday, continue trying on Tuesday, Wednesday, and then Thursday. If on Thursday, you have not made contact with KWL-48, Honolulu, call the PIRO Observer Programs collect at (808) 973-2937 using a commercial radio-telephone service.

Keep in mind that due to daily solar activity, lower frequencies work better during early morning and late afternoon, while higher frequencies work better during mid-day.

To hail the Honolulu Port Field Station, speak clearly:

K-W-L 48, K-W-L 48, K-W-L 48, Honolulu, this is (name of the vessel spoken 3 times) followed by the vessel's call sign. If there is a lot of static on the channel, you may need to say "Kilo-Whiskey-Lima" instead the letters "KWL" when hailing the Observer Program in Honolulu.

Be sure to allow at least one minute between attempts and be careful not to "step on" other users on the frequency. FCC monitoring stations listen for infractions and issue citations.

After hailing, be alert to hear the station: **(name of the vessel spoken 3 times) and the call sign followed by this is K-W-L 48, K-W-L 48, K-W-L 48, Honolulu**.

If you hear KWL 48 calling your vessel, please respond and try to establish contact. After contact is established, identify yourself (your first name is sufficient) and ask if the base station is ready to receive your data. If you don't get a response after hailing the base station three times, wait several minutes. Then broadcast your radio report, line by line anyway. Occasionally we are able to hear observers calling in, but they are unable to hear a response from the program office.

DO NOT SAY THE POSITION OF THE VESSEL
When making a radio report to the Honolulu Port Field Station, or talking to anyone else on the SSB.

When the base station is ready, transmit the lines of data, reading each horizontal line in numerical order. Listen after each line as the base station radio operator confirms the transmission. For example, if line one was **4760**, you would say, **"Line one, four, seven, six, zero; forty-seven, sixty, over."** KWL 48 Honolulu would respond, **"Roger, copy line one, four, seven, six, zero; forty-seven, sixty, over."**

After transmitting all five lines, ask if you have any questions about your duties. Also ask if there are any messages for you. During decoding of the report, your status will be determined and appropriate action taken. If no contact is made after three attempts, try again at a later time or on another frequency.

Remember, when calling in, try not to tie up the radio with idle "chit-chat", other observers may be waiting to call in. Also, it is not permitted to transmit music or communications containing obscene, indecent, or profane words, language, or meaning. Using standard procedure words, such as **"over"**, **"roger"**, and **"out"** is good operating practice. When communications are difficult due to noise or weak signals, you can avoid confusion over words by spelling them out using the standard phonetic alphabet that follows.

Radio Distress Procedure

In case it is necessary to transmit an emergency radio distress signal, it is important that the following procedure is used. Most single side band radios have a small red button that automatically switches the radio to the emergency broadcasting frequency and transmits an alarm signal. If not, then it will be necessary to manually switch to **2182 MHz** or **4125 MHz** on single side band radios (SSB) or to **Channel 16 on VHF** radios. A radio distress signal may be sent by depressing the key button on the microphone and following the steps below.

1. **Say "MAY-DAY" 3 X**

2. **Say "This is the [Vessel name] 3 X** (and radio call sign)

3. **Say the Location of vessel.** (Lat / Lon coordinates, if possible)

4. **Say Nature of distress.**

5. **Say Number of persons on board.** (state number of injured and types of injuries)

6. **Say a Description of the vessel.** (include vessel type, length and color)

Standard Phonetic Alphabet

Letter	Word	Pronunciation
A	Alfa	AL FAH
B	Bravo	BRAH VOH
C	Charlie	CHAR LEE
D	Delta	DELL TAH
E	Echo	ECK OH
F	Foxtrot	FOKS TROT
G	Golf	GOLF
H	Hotel	HOH TELL
I	India	IN DEE AH
J	Juliette	JOO LEE ETT
K	Kilo	KEY LOW
L	Lima	LEE MAH
M	Mike	MIKE
N	November	NO VEM BER
O	Oscar	OSS CAR
P	Papa	PA PAH
Q	Quebec	KWE BECK
R	Romeo	ROW ME OH
S	Sierra	SEE AIR RAH
T	Tango	TANG GO
U	Uniform	YOU NEE FORM
V	Victor	VIK TUR
W	Whiskey	WISS KEY
X	X-ray	ECKS RAY
Y	Yankee	YANG KEY
Z	Zulu	ZOO LOO

Radio Report Sheet: Example

LONGLINE RADIO REPORTING WORKSHEET ONE

	A	B	C	D
( )	DEP / ARR MONTH		DEP / ARR HOUR	STATUS
( )				
( )	TURTLE SPEC	BIRD SPEC	MM SPEC	FISH SPEC
( )	DEP/ ARR DAY			DEP / ARR MINUTES
( )			DEP / ARR	

OBSERVER NAME:
VESSEL NAME:
CALL SIGN:
CRUISE NUMBER:

PERSONAL STATUS
0 = I'M OK, WORK OK
1 = I'M OK, WORK ROUGH, WORKABLE
2 = I'M OK, WORK NOT OK, WORKABLE
3 = I MAY NOT BE OK, WORK NOT OK
4 = I'M NOT OKAY, WORK NOT OK

RADIO REPORTING SUMMARY

DATE	TIME	FREQ.	NOTES

Specimen Type Codes
0 = None
1 = Whole animal
2 = Skin plug
3 = Skin plug & Whole
4 = Other parts

Dep / Arr Codes
1 = Departure
2 = Arrival
3 = Mid-Cruise

Satellite Phone Protocols

Usage

I. Phone PIRO office at vessel departure with notification of the assigned satellite phone number.
II. Do not use your satellite phone for weekly radio reports if there is nothing noteworthy to report. Should contact with NMFS be required (questions, incidents, or reporting a take), use the radio first, then satellite phone only if a response is required.
a. In the case of a protected species interaction or rare sighting, use your satellite phone to contact PIRO staff as soon as possible. See instructions on what should be included when reporting a sea turtle interaction on page 18-10.
b. In the case of after office work hours, or weekends, leave a message on the office phone delivery system using the phone number list in the Numbers section below. Be sure to check your phone for messages in response.
III. Reports on the satellite phone do not need to be encoded unless privacy/intimidation are an issue. In these cases utilize the radio report worksheet codes.

DIALING

To unlock the phone for use, enter the PIN # 1111.

To dial out, dial: 00+ 1 + Area Code + Phone Number

Your primary contact is **Kevin Busscher @ 808-944-2215**, secondary contact is **Eric Siemer @ 808-944-2252.**

In addition, if you are calling in due to a vessel or personal emergency, please contact your port coordinator.

Your satellite phone # is listed on the antennae of the unit. This is for incoming calls from NMFS staff, NWO staff, or other emergency personnel, **no exceptions**.

EMERGENCY – !!! CALL USCG SEARCH AND RESCUE FIRST !!!

Distress procedures remain unchanged with the following exception:

The satellite phone is to be used in **addition** to the radio and distress beacons.

Satellite Phones

Follow protocol included in trip packet; Phone Eric Siemer at PIRO (808) 944-2252 when departing on each vessel with notification of your assigned satellite phone number. Should contact with NMFS be required (questions, incidents, or reporting a take), use the radio first, then satellite phone. Most phones have the USCG programmed into the phone memory, to access, turn phone on and depress #1 keypad. The name will be displayed and the call will be made immediately. Check the phone once a week for any voice messages by looking in the display for a "mail envelope". If the envelope is present, check your voicemail by pushing the button on the number pad that resembles a mail envelope. Refer to manual for other voicemail options.

NUMBERS

USCG Search & Rescue	(808) 541-2500
Speed Dial #1	(HOLD 1)

EMERGENCY PIRO OFFICE

PIRO Office	(808) 973-2937	
Kevin Busscher	(808) 944-2215	Cell# (808) 542-3032
Joe Arceneaux	(808) 944-2216	Cell# (808) 754-4213
John Kelly	(808) 944-2202	Cell# (808) 351-3024 Home (808) 230-2027
Dawn Golden	(808) 944-2250	
Jeremy Bisson	(808) 944-2251	
Eric Siemer	(808) 944-2252	
Eric Forney	(808) 944-2254	
Lesley Jantz	(808) 944-2253	
Rich Kupfer	(808) 944-2236	
Tom Swenarton	(808) 944-2255	
Adam Bailey	(808) 944-2248	
Oriana Villar	(808) 944-2258	
Jeremy Willson	(808) 944-2237	

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Chapter 19 Equipment List & Maintenance Tips

Bucket

Try to get a 7 gallon bucket, allowing more room for gear
Make sure top fits securely
Store inside a covered area when not in use
Clearly print name on specimen label with sharpie and attach with a zip tie to bucket handle. Doing so, makes it easy for you and the port coordinator to find your bucket in the gear shack
Good idea to invest in bungee cords to secure bucket
Highly recommended to put a towel/rag or other absorbent material in bottom to absorb residual moisture/ condensation. Will also prevent bolt cutters from rusting so badly.

Rain Gear

Try on before going to sea to ensure proper fit
Label or mark in a way you can distinguish your gear from the crew's
Wash and scrub after each trip
Don't recommend wearing shorts underneath, conducive to skin rash

Boots

Label or mark to distinguish from crew's boots
To dry, store near engine room hatch after haul
For comfort, invest in insoles

Hand counter/clicker

Recommend having four, keeping two as back up.
Attach clickers to your raingear to raingear. You'll know where they are at all times and they cannot decide to "jump overboard."
If metal clickers treat them with WD40 periodically
Test clickers periodically to ensure that they advance properly, i.e., one number at a time.
Keep dry and out of saltwater for they rust easily

Large plastic bags

Ideal for larger specimens such as swordfish rats, sharks, and albatross

Small plastic bags

Great for smaller specimens and for storing gear keeping it together and dry

Rubber bands

Very versatile, great to use to secure specimens in large or small bags

Labels

Good idea to keep them with the rubber bands and plastic bags and are most legible when written on with a sharpie. When a pencil is used, by time the specimen reaches the lab, pencil descriptions are faded and not clear to the end user.

Pencils
Recommend having four if possible, keeping two in clipboard, and two in bucket.
Can always use a knife to sharpen, but small pencil sharpeners store easily in clipboard and work great and so do extra erasers

Zip Ties
Great to use to attach labels to specimen itself and to the bag the specimen is wrapped in

Measuring Tape
Needed for curved carapace measurement on turtle and claspers on shark

Flashlight/ Petzl's
If flashlight becomes moist from seawater, remove batteries, rinse with fresh water and dry.

Thermometer (infrared)
Can be fragile, handle with care and keep secure and dry in plastic bag inside bucket BUT be sure the trigger is not activated so the batteries do not run dry. For accurate readings, use a damp paper towel to clean the infrared lens.

Duct/Fiber Tape
Don't leave port without it! Works wonders in many ways, especially in safeguarding bunk from curious, hungry, roaches.

Gloves
Helps keep hands warm and dry

Vernier Calipers
Keep dry and away from salt spray, wash clean with fresh water

Personal Marker Light
Good idea to attach to rain gear, if you should ever fall, this light may save your life

Binoculars
Best to keep out of direct sunlight
Rinse salt spray off by placing lens under lightly running water, wipe dry
Recommend using strap at all times

Turtle Biopsy and Tagging Kit
Inventory kit before each trip! You should find a biopsy core device, alcohol swab, biopsy punch, forceps tissue, marking pen, whirlpaks of NaCl, vials of NaCl, tags, and a tag applicator (do not remove tag applicator from protective baggy until use) To prevent rusting of materials, its wise to check the kits for dampness, Tupperware is not always water tight

Marine Mammal Kit
Inventory kit before each trip! You should find a biopsy core device, DMSO, marking pen, pencil, and gloves

Shark Kit
Inventory kit before each trip! You should find scalpels and DMSO or 95% ethanol

Clipboard
Great for keeping data sheets and field guides together and dry. Through past experiences, I recommend lying clipboard face down when not in use, in bucket, or anywhere else out of strong winds, keeping your

data from possibly flying free into the wind or use a rubberband to secure data sheets onto clipboard. May be helpful to tape a list of common species codes in a way that it is waterproof, great for quick reference.

Sleeping Bag

Excellent to use as a buffer between you and the boat's mattress and thick enough for boats that blast the AC

Poncho Liner

Lightweight cover and works well as a buffer too

Hard Hat

Protects head from mainline and other flying objects

Bolt Cutters

As an alternative for using the dehooking device, bolt cutters may be used to cut the barb off hooks of a turtle that is landed (lube and replace nose of cutters into protective baggie after use to prevent rusting)

Marine First Aid Kit (optional)

Each observer will be assigned a first aid kit to be returned to contractor upon completion of contract. Whole kit may be taken out to sea or broken down, selecting certain items to be stored in ziplock. Please keep a list in your kit of what has been taken and used so it may be replaced.

Thermarest

Great for bunks with no mattress and generally more hygienic than those with a mattress

Water Filter

Before first use, brush the filter surface. When storing the filter after use, remove hose from water source and pump and let dry. Remove filter cartridge from pump and shake out water; air dry if possible.

Lobster Phyllosoma Kit

Until needed, keep in duffel bag inside boat
Place lobster larvae onto cardboard and label **each specimen with a tag indicating date, location coordinates, trip number and your name.** Keep specimen in the freezer

Life Jacket

Wear at all times while on deck.
Tag and label with name
Read instructions on new auto inflate style!!!! If auto-inflates accidentally, the unit will only be able to be manually inflated with spare CO2 thereafter until serviced.

Immersion Suit and EPIRB

Test EPIRB and GPIRB before each trip.
Before each trip, check that strobe light works, and wax zipper if necessary
Examine antenna on EPIRB for cracks and test performance
Keep EPIRB with suit and store where it is easily accessible
Tag and label with name

Reference Books

Best to store where they will remain dry and accessible. Waterproof placards can be kept in bucket or clipboard for easy access. If you keep them in your bucket, you MUST keep the non-waterproof books in the issued protective plastic bags!!!!!! We have already lost countless books due to lack of attention to this details. Books are $30-$40 each!!!!

Calipers

Keep in secure area and out of the way of crew
Do not store in gaff holders for the numbers will rub off
If bent by sun or water damage, wet calipers and place under hook box to straighten

Turtle Pole

Keep accessible, not secured on top of vessel
Before you leave the gear shack, make sure the plug screws onto the pole evenly. Great to use WD40 or silicon grease on threaded end of pole and make sure biopsy plug screws on easily. All poles will have a plastic protective covering but if missing wrap the threaded end with duct tape when not in use to protect it from rust
Do not leave the biopsy plug on the pole or store pole with the weight on the threaded end

Turtle net

Keep accessible and out of direct sunlight if possible

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Chapter 20 Species Codes List

COMMON NAME	CODE	SCIENTIFIC NAME

FISH

Barracuda, Great	**131**	*Sphyraena barracuda*
Billfish, Unidentified	**089**	Billfishes (Xiphiidae & Istiophoridae)
Bonito, Pacific	**003**	*Sarda chiliensis*
Bony Fish, Other Identified	**910***	Osteichthyes

(*For instances when you are able to identify a species of fish, but it is not included in this list of codes. Record the English common name of the fish and enter 910 in the space for the species code.)

Bony Fish, Unidentified	**700**	Osteichthyes
Crestfish	**906**	*Lophotus lacepede*
Dolphinfish	**914**	*Coryphaena hippurus*
Dolphinfish, Pompano	**913**	*Coryphaena equiselis*
Dogfish, Velvet	**097**	*Scymnodon sqamulosis*
Driftfish	**059**	Nomeidae (*Cubiceps spp.*)
Escolar, (Smith's)	**013**	*Lepidocybium flavobrunneum*
Escolar, Longfin (Black mackerel)	**054**	*Scombrolabrax heterolepsis*
Escolar, Roudi's	**056**	*Promethichthys prometheus*
Flyingfish	**445**	Exocoetidae
Hammerjaw	**472**	*Omosudis lowei*
Jack, Cottomouth	**042**	*Uraspis spp.*
King-of-Salmon	**912**	*Trachipterus altivelis*
Lancetfish, Longnose	**909**	*Alepisaurus ferox*
Lancetfish, Shortnose	**905**	*Alepisaurus brevirostris*
Louvar	**191**	*Luvarus imperialis*
Manta-Mobula, unidentified	**129**	Mobulidae
Manta ray, Giant	**132**	*Manta birostris*

Mobula (a.k.a. Devil ray) **133** *Mobula spp.*

Mackerel, Bullet **019** *Auxis rochei*
Mackerel, Jack **055** *Trachurus symmetricus*
Mackerel, Pacific **051** *Scomber japonicus*

Marlin, Striped **092** *Tetrapturus audax*
Marlin, Blue **093** *Makaira mazara*
Marlin, Black **090** *Makaira indica*

Mola, Common (Ocean sunfish) **292** *Mola mola*
Mola, Sharptail **294** *Masturus lanceolatus*
Mola, Slender **298** *Ranzania laevis*

Needle Fish, Gaping **474** *Ablennes hians*

Oarfish **911** *Regalecus glesne*

Oilfish **014** *Ruvettus pretiosus*

Opah **467** *Lampris guttatus*

Pomfret, Brama **903** *Brama spp. (B. orcini & B. japonica)*
Pomfret, Lustrous (Brilliant) **918** *Eumegistus illustris*
Pomfret, Sickle **908** *Taractichthys steindachneri*
Pomfret, Dagger **907** *Taractes rubescens*
Pomfret, Rough **904** *Taractes asper*

Puffer, Pelagic **293** *Lagocephalus lagocephalus*

Rainbow Runner **058** *Elagatis bipinnulatus*

Ray, Other Identified **919** Rajiformes
Ray, Unidentified **170** Rajiformes

Remora/Suckerfish **127** Echeneidae

Ribbonfish, Scalloped **902** *Zu cristatus*
Ribbonfish, Tapertail **901** *Trachipterus fukuzakii*

Sailfish **095** *Istiophorus platypterus*

Scabbardfish, Razorback **053** *Assurger anzac*

Scad, Mackerel **296** *Decapterus macarellus*
Scad, Bigeye **297** *Selar crumenophthalmus*

Shark, Basking **156** *Cetorhinus maximus*
Shark, Bigeye Thresher **147** *Alopias superciliosus*
Shark, Bignose **944** *Carcharhinus altimus*
Shark, Blacktip **149** *Carcharhinus limbatus*
Shark, Blacktip Reef **948** *Carcharhinus melanopterus*
Shark, Blue **167** *Prionace glauca*
Shark, Common Thresher **155** *Alopias vulpinus*
Shark, Cookie Cutter **136** *Isistius brasiliensis*
Shark, Crocodile **143** *Pseudocarcharias kamoharai*
Shark, Galapagos **947** *Carcharhinus galapagensis*
Shark, Gray Reef **137** *Carcharhinus amblyrhynchos*
Shark, Longfin Mako **938** *Isurus paucus*
Shark, Megamouth **192** *Megachasma pelagios*
Shark, Oceanic White-Tip **138** *Carcharhinus longimanus*

Shark, Other Identified **935*** Chondrichthyes
(*For instances when you are able to identify a species of shark, but it is not included in this list of codes. Record the English common name of the shark and enter 935 in the space for the species code.)

Shark, Pelagic Thresher **148** *Alopias pelagicus*
Shark, Salmon **942** *Lamna ditropis*
Shark, Sandbar **943** *Carcharhinus plumbeus*
Shark, Scalloped Hammerhead **949** *Sphyrna lewini*
Shark, Shortfin Mako **151** *Isurus oxyrinchus*
Shark, Silky **139** *Carcharhinus falciformis*
Shark, Smooth Hammerhead **158** *Sphyrna zygaena*
Shark, Tiger **142** *Galeocerdo cuvieri*
Shark, Unidentified **936** Chondrichthyes
Shark, Unid. Hammerhead **157** *Sphyrna spp.*
Shark, Unid. Mako **939** *Isurus spp.*
Shark, Unid. Thresher **937** *Alopiidae spp.*
Shark, White **096** *Carcharodon carcharias*

Snake Mackerel **295** *Gempylus serpens*

Spearfish, Shortbill **094** *Tetrapturus angustirostris*

Stingray, Pelagic **193** *Dasyatis violacea*

Swordfish **091** *Xiphias gladius*

Triggerfish, Unidentified **291** Balistidae
Triggerfish, Rough (a.k.a. Pelagic) **290** *Canthidermis maculata*

Tuna, Albacore **005** *Thunnus alalunga*
Tuna, Bigeye **916** *Thunnus obesus*

Tuna, Pacific Bluefin **004** *Thunnus orientalis*
Tuna, Skipjack **002** *Katsuwonus pelamis*
Tuna, Kawakawa **009** *Euthynnus affinis*
Tuna, Unidentified **006** Tunas (tribe: Thunnini)
Tuna, Yellowfin **001** *Thunnus albacares*

Wahoo **057** *Acanthocybium solandri*

Yellowtail **040** *Seriola lalandei*

SEABIRDS

Albatross, Black-Footed **dNG** *Phoebastria nigripes*
Albatross, Laysan **dIM** *Phoebastria immutabilis*
Albatross, Short-tailed **dAL** *Phoebastria albatrus*
Albatross, Unidentified **dSP** *Phoebastria spp*.

Alcid, Unidentified **aSP** Alcidae

Bird, Unidentified **aVE** Aves
Bird, Other Identified **aVO*** Aves
(*For instances when you are able to identify a species of bird, but it is not included in this list of codes. Record the English common name of the bird and enter aVO in the space for the species code.)

Booby, Brown **sLP** *Sula leucogaster plotus*
Booby, Masked **sDP** *Sula dactylatra personata*
Booby, Red-Footed **sSR** *Sula sula rubripes*

Cormorant, Brandt's **pPN** *Phalacrocorax penicillatus*
Cormorant, Double-crested **pAU** *Phalacrocorax auritus*
Cormorant, Pelagic **pPL** *Phalacrocorax pelagicus*
Cormorant, Unidentified **pSP** *Phalacrocorax spp.*

SEA TURTLES

Turtle, Green/Black **CM** *Chelonia mydas / C. agassizi*
Turtle, Hawksbill **EI** *Eretmochelys imbricata*
Turtle, Leatherback **DC** *Dermochelys coriacea*
Turtle, Loggerhead **CC** *Caretta caretta*
Turtle, Olive Ridley **LV** *Lepidochelys olivacea*
Turtle, Unidentified **UT** Testudines
Turtle, Unidentified Hardshell **UH** Chelonidae (non-Leatherback)

MARINE MAMMALS

Beaked Whale, Baird's **BD** *Berardius bairdii*
Beaked Whale, Blainville's **MD** *Mesoploson densirostris*
Beaked Whale, Cuvier's **ZI** *Ziphius cavirostris*
Beaked Whale, Mesoplodont **UM** *Mesoplodon spp.*
Beaked Whale, Unidentified **ZU** Ziphiidae

Cetacean, Unidentified **UC** Cetacea

Dolphin, Bottlenose **TT** *Tursiops truncatus*
Dolphin, Unidentified Common **DD** *Delphinus sp.*
Dolphin, Long-Beaked Common **DL** *Delphinus capensis*
Dolphin, Short-Beaked Common **DS** *Delphinus delphis*
Dolphin, Fraser's **LH** *Lagenodelphis hosei*
Dolphin, N. Right Whale **LB** *Lissodelphis borealis*
Dolphin, Pac. White-sided **LO** *Lagenorhynchus obliquidens*
Dolphin, Risso's **GG** *Grampus griseus*
Dolphin, Rough-toothed **SB** *Steno bredanensis*
Dolphin, Spinner **SL** *Stenella longirostris*
Dolphin, Spotted **SA** *Stenella attenuata*
Dolphin, Striped **SC** *Stenella coeruleoalba*
Dolphin, Unidentified **UD** Delphinidae

Porpoise, Dall's **PD** *Phocoenoides dalli*
Porpoise, Harbor **PP** *Phocoena phocoena*
Porpoise, Unidentified **UP** Phocoenidae

Whale, Blue **BM** *Balaenoptera musculus*
Whale, Bryde's **BE** *Balaenoptera edeni*
Whale, Fin **BP** *Baleanoptera physalus*
Whale, Gray **ER** *Eschrichtius robustus*
Whale, Humpback **MN** *Megaptera novaeangliae*
Whale, Killer **OO** *Orcinus orca*
Whale, False Killer **PC** *Pseudorca crassidens*
Whale, Pygmy Killer **FA** *Feresa attenuata*
Whale, Melon-headed **PE** *Peponocephala electra*
Whale, Minke **BA** *Balaenoptera acutorostrata*
Whale, Sei **BB** *Balaenoptera borealis*
Whale, Short-finned Pilot **GM** *Globicephala macrorhynchus*
Whale, Sperm **PM** *Physeter macrocephalus*
Whale, Pygmy Sperm **KB** *Kogia breviceps*
Whale, Dwarf Sperm **KS** *Kogia simus*
Whale, Unidentified Kogia **UK** *Kogia sp.*

Whale, Unidentified **UW** Cetacea

Fur Seal, Guadalupe **AT** *Arctocephalus townsendi*
Fur Seal, Northern **CU** *Callorhinus ursinus*
Fur Seal, Unidentified **UA** Arctocephalinae

Pinniped, Unidentified **PU** Pinnipedia

Sea Lion, California **ZC** *Zalophus californianus*
Sea Lion, Steller **EJ** *Eumetopias jubatus*
Sea Lion, Unidentified **UO** Otariinae (Eared seals)

Seal, Harbor **PV** *Phoca vitulina*
Seal, Hawaiian Monk **MS** *Monachus schauinslandi*
Seal, Northern Elephant **MA** *Mirounga angustirostris*
Seal, Unidentified **US** Phocidae (True seals)

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Chapter 21 Appendices

The appendices include the following:

Temperature & Length Conversion Formulas

Fahrenheit –Celsius Conversion Chart

Directions for USFWS 3-177 and CITES Import forms

Observer related regulations from 50 CFR part 600

Liferaft cradle position

Changes made to manual

Conversions and Formulas

The following conversions and formulas may be useful during a cruise. If you are uncertain of any conversions, record the data in the units available near the appropriate data field. The units may then be converted once you arrive on shore at the end of the cruise. Refer to the instructions in the field manual to confirm the correct unit for the datra element in question.

Length/Depth:

1 fathom = 6 feet = 1.82 meters.

Example: 45 fm x (1.82 m/fm) = 81.9m.

Speed/Distance:

1 nautical mile = 1.1508 statute miles (mi) = 6086ft.
(1 nautical mile = 1 knot)

Example: 12kts x 1.1508 mi/kt = 13.8096 mph.

Temperature:

To get Fahrenheit,
Fahrenheit (ºF) = (ºC x 9/5) + 32
= (ºC x 1.8) + 32

Example: 17 ºC = ??? ºF
a. (17 x 1.8) +32 = ºF
b. (30.6) +32 = ºF
c. 62.6 = ºF

Solution: 17 ºC = 62.6 ºF

To get Celsius,
Celsius (ºC) = (ºF - 32) x 5/9
= (ºF - 32) x 0.555

Example: 81 ºF = ??? ºC
a. (81 ºF -32) x 0.555 = ºC
b. (49) x 0.555 = ºC
c. 27.195 = ºC

Solution: 81 ºF = 27.195 ºC

Fahrenheit-Celsius Conversion Chart

Fahrenheit to Celsius Conversions

Deg F	Deg C	Deg F	Deg C	Deg F	Deg C	Deg F	Deg C	Deg F	Deg C
0	-17.8	21	-6.1	42	5.6	63	17.2	84	28.9
1	-17.2	22	-5.6	43	6.1	64	17.8	85	29.4
2	-16.7	23	-5	44	6.7	65	18.3	86	30
3	-16.1	24	-4.4	45	7.2	66	18.9	87	30.5
4	-15.5	25	-3.9	46	7.8	67	19.4	88	31.1
5	-15	26	-3.3	47	8.3	68	20	89	31.6
6	-14.4	27	-2.8	48	8.9	69	20.5	90	32.2
7	-13.9	28	-2.2	49	9.4	70	21.1	91	32.7
8	-13.3	29	-1.7	50	10	71	21.6	92	33.3
9	-12.8	30	-1.1	51	10.5	72	22.2	93	33.9
10	-12.2	31	-0.6	52	11.1	73	22.8	94	34.4
11	-11.7	32	0	53	11.7	74	23.3	95	35
12	-11.1	33	0.6	54	12.2	75	23.9	96	35.5
13	-10.5	34	1.1	55	12.8	76	24.4	97	36.1
14	-10	35	1.7	56	13.3	77	25	98	36.6
15	-9.4	36	2.2	57	13.9	78	25.5	99	37.2
16	-8.9	37	2.8	58	14.4	79	26.1	100	37.7
17	-8.3	38	3.3	59	15	80	26.6	101	38.3
18	-7.8	39	3.9	60	15.5	81	27.2	102	38.9
19	-7.2	40	4.4	61	16.1	82	27.8	103	39.4
20	-6.7	41	5	62	16.7	83	28.3	104	40

Relevant statutes regarding data collection by NMFS

The NMFS is authorized to collect biological, economic, social and other data under the following statutes, among others;

a. Agricultural Marketing Act of 1946, 7 U.S.C. 1621-1627

b. Agricultural Trade Development and Assistance Act of 1954, 7 U.S.C. 1704

c. Anadromous Fish Conservation Act, 16 U.S.C. 757-757f

d. Atlantic Coast Fish Study for Development and Protection of Fish Resources, 1950, 16 U.S.C. 760a

e. Atlantic Tunas Convention Act of 1975, 16 U.S.C 971-971I

f. Eastern Pacific Tuna Licensing Act of 1984, 16 U.S.C. 972-972h

g. Endangered Species Act, 16 U.S.C. 1531-1543

h. Farrington Act of 1947, 16 U.S.C. 758-758d

i. Fish and Wildlife Act of 1956, 16 U.S.C. 742(a) *et seq*

j. Fish and Wildlife Coordination Act of 1934, 16 U.S.C. 661-666c

k. Fishery Market New Service Act of 1937, 50 Stat. 296

l. Fur Seal Act, 16 U.S.C. 1151-1175

m. Interjurisdictional Fisheries Act of 1986, 16 U.S.C. 4101 *et seq*

n. Magnuson-Stevens fishery Conservation and Management Act,

16 U.S.C. 1801 *et seq*

o. Marine Mammal Protection Act, 16 U.S.C. 1361 *et seq*

p. Marine Migratory Gamefish Act of 1959, 16 U.S.C. 160e

q. South Pacific Tuna Act of 1988, 16 U.S.C. 973-973n

r. Tuna Conventions Act of 1950, 16 U.S.C. 951-961

TITLE 50--WILDLIFE AND FISHERIES
DEPARTMENT OF COMMERCE

PART 600--MAGNUSON-STEVENS ACT PROVISIONS--Table of Contents

Subpart H--General Provisions for Domestic Fisheries

50 CFR Sec. 600.725 General prohibitions.

It is unlawful for any person to do any of the following:

(a) Possess, have custody or control of, ship, transport, offer for sale, sell, purchase, land, import, or export, any fish or parts thereof taken or retained in violation of the Magnuson-Stevens Act or any other statute administered by NOAA and/or any regulation or permit issued under the Magnuson-Stevens Act.

(b) Transfer or attempt to transfer, directly or indirectly, any U.S.-harvested fish to any foreign fishing vessel, while such vessel is in the EEZ, unless the foreign fishing vessel has been issued a permit under section 204 of the Magnuson-Stevens Act, which authorizes the
receipt by such vessel of U.S.- harvested fish.

(c) Fail to comply immediately with enforcement and boarding procedures specified in Sec. 600.730.

(d) Refuse to allow an authorized officer to board a fishing vessel or to enter areas of custody for purposes of conducting any search, inspection, or seizure in connection with the enforcement of the Magnuson-Stevens Act or any other statute administered by NOAA.

(e) Dispose of fish or parts thereof or other matter in any manner, after any communication or signal from an authorized officer, or after the approach by an authorized officer or an enforcement vessel or aircraft.

(f) Assault, resist, oppose, impede, intimidate, threaten, or interfere with any authorized officer in the conduct of any search, inspection, or seizure in connection with enforcement of the Magnuson- Stevens Act or any other statute administered by NOAA.

(g) Interfere with, delay, or prevent by any means, the apprehension of another person, knowing that such person has committed any act prohibited by the Magnuson-Stevens Act or any other statute administered by NOAA.

(h) Resist a lawful arrest for any act prohibited under the Magnuson-Stevens Act or any other statute administered by NOAA.

(i) Make any false statement, oral or written, to an authorized officer concerning the taking, catching, harvesting, landing, purchase, sale, offer of sale, possession, transport, import, export, or transfer of any fish, or attempts to do any of the above.

(j) Interfere with, obstruct, delay, or prevent by any means an investigation, search, seizure, or disposition of seized property in connection with enforcement of the Magnuson-Stevens Act or any other statute administered by NOAA.

(k) Fish in violation of the terms or conditions of any permit or authorization issued

under the Magnuson-Stevens Act or any other statute administered by NOAA.

(l) Fail to report catches as required while fishing pursuant to an exempted fishing permit.

(m) On a scientific research vessel, engage in fishing other than recreational fishing authorized by applicable state or Federal regulations.

(n) Trade, barter, or sell; or attempt to trade, barter, or sell fish possessed or retained while fishing pursuant to an authorization for an exempted educational activity.

(o) Harass or sexually harass an authorized officer or an observer.

(p) Fail to submit to a USCG safety examination when required by NMFS pursuant to Sec. 600.746.

(q) Fail to display a Commercial Fishing Vessel Safety Examination decal or a valid certificate of compliance or inspection pursuant to Sec. 600.746.

(r) Fail to provide to an observer, a NMFS employee, or a designated observer provider information that has been requested pursuant to Sec. 600.746, or fail to allow an observer, a NMFS employee, or a designated observer provider to inspect any item described at
Sec. 600.746.

(s) Fish without an observer when the vessel is required to carry an observer.

(t) Assault, oppose, impede, intimidate, or interfere with a NMFS-approved observer aboard a vessel.

(u) Prohibit or bar by command, impediment, threat, coercion, or refusal of reasonable assistance, an observer from conducting his or her duties aboard a vessel.

(v) to end on page 84 of CFR 50 part 600 to end; omitted. The material does not pertain to observers, observer deployment or placement. It will be made available upon request.

TITLE 50--WILDLIFE AND FISHERIES
DEPARTMENT OF COMMERCE

PART 600--MAGNUSON-STEVENS ACT PROVISIONS--Table of Contents

Subpart H--General Provisions for Domestic Fisheries

50 CFR Sec. 600.746 Observers.

(a) Applicability. This section applies to any fishing vessel required to carry an observer as part of a mandatory observer program or carrying an observer as part of a voluntary observer program under the Magnuson-Stevens Act, MMPA (16 U.S.C. 1361 et seq.), the ATCA (16 U.S.C. 971 et seq.), the South Pacific Tuna Act of 1988 (16 U.S.C. 973 et seq.), or any other
U.S. law.

(b) Observer requirement. An observer is not required to board, or stay aboard, a vessel that is unsafe or inadequate as described in paragraph (c) of this section.

(c) Inadequate or unsafe vessels. (1) A vessel is inadequate or unsafe for purposes of carrying an observer and allowing operation of normal observer functions if it does not comply with the applicable regulations regarding observer accommodations (see 50 CFR parts 229,
285, 300, 600, 622, 648, 660, 678, and 679) or if it has not passed a USCG safety examination or inspection. A vessel that has passed a USCG safety examination or inspection must display one of the following:

(i) A current Commercial Fishing Vessel Safety Examination decal,
issued within the last 2 years, that certifies compliance with regulations found in 33 CFR, chapter I and 46 CFR, chapter I;

(ii) A certificate of compliance issued pursuant to 46 CFR 28.710;
or

(iii) A valid certificate of inspection pursuant to 46 U.S.C. 3311.

(2) Upon request by an observer, a NMFS employee, or a designated observer provider, a vessel owner/operator must provide correct information concerning any item relating to any safety or accommodation requirement prescribed by law or regulation. A vessel owner or operator must also allow an observer, a NMFS employee, or a designated observer
provider to visually examine any such item.

(3) Pre-trip safety check. Prior to each observed trip, the observer is encouraged to briefly walk through the vessel's major spaces to ensure that no obviously hazardous conditions exist. In addition, the observer is encouraged to spot check the following major items for compliance with applicable USCG regulations:

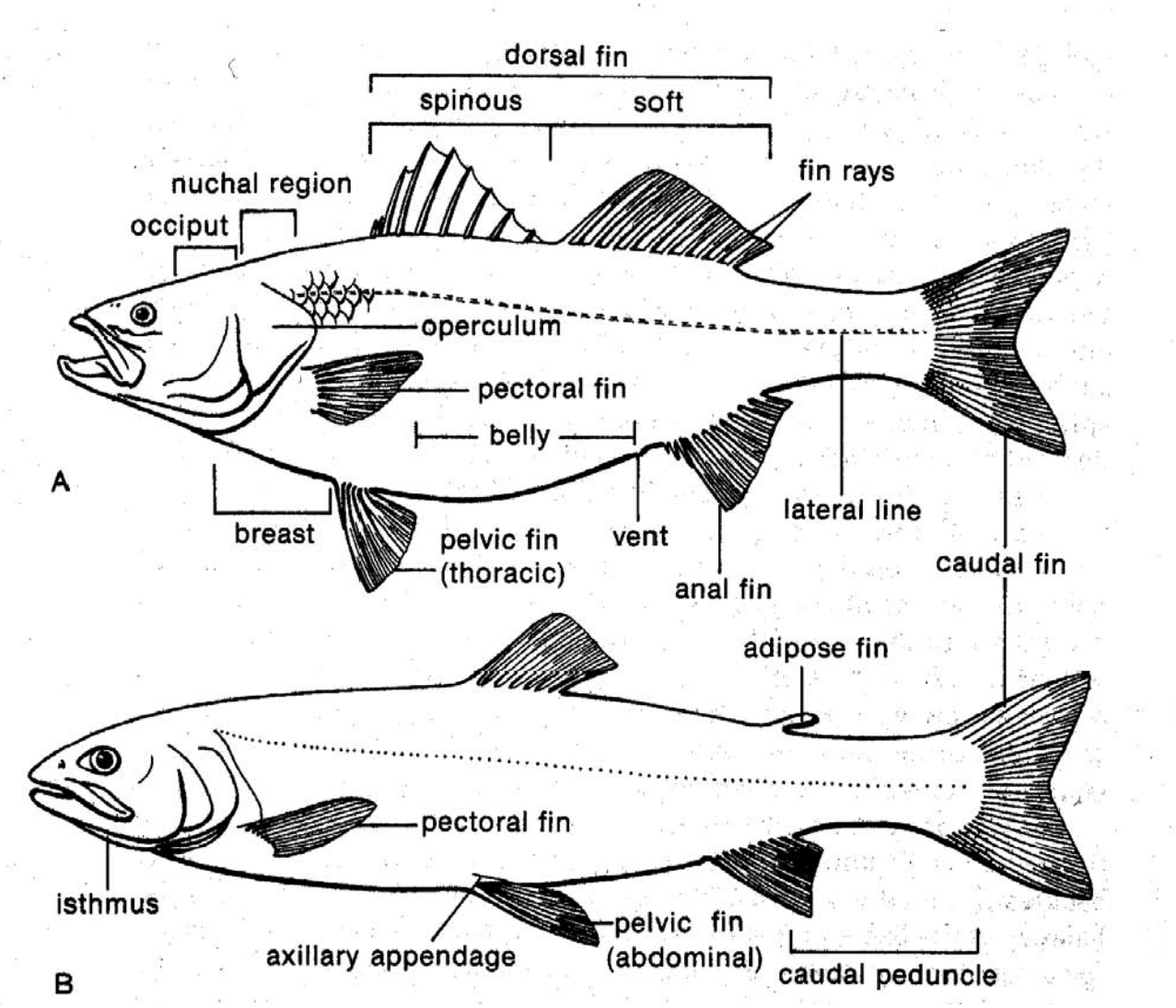
(i) Personal flotation devices/immersion suits;

(ii) Ring buoys;

(iii) Distress signals;

(iv) Fire extinguishing equipment;
(v) Emergency position indicating radio beacon (EPIRB), when required; and
(vi) Survival craft, when required.

Spiny Rayed Fish



From *Biology of Fishes* by Carl Bond, 1979. Saunders College Publishing

A.Example of a typical spiny rayed fish. (Order Perciformes)

B.Example of a typical soft rayed fish. (Order Salmoniformes)

General Safety Policies

SAFETY and INTEGRITY continue to be the essential watchwords for observer performance and conduct.

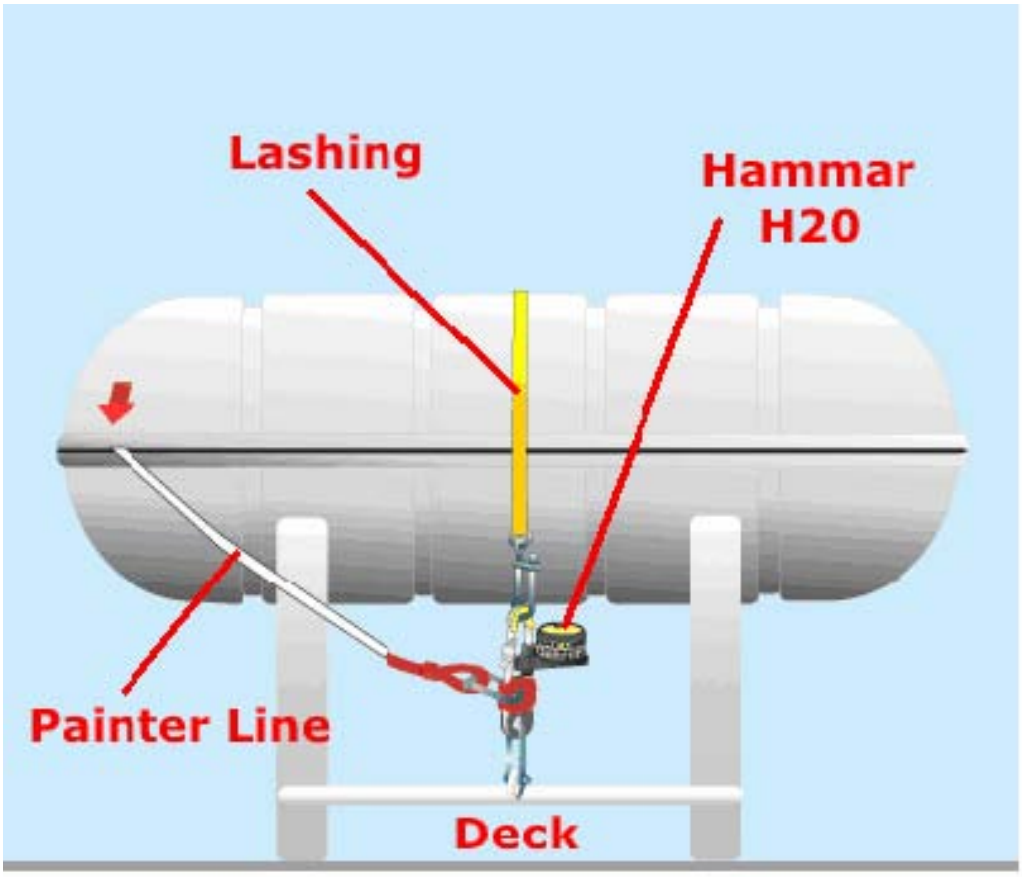
Safety comes first. If you are unable to collect data due to safety concerns, document the particular details of the situation as fully as you can. The report should include a description of the problem, the attempted solutions and the final resolution.

You may encounter a "near miss" (*i.e.* an accident that almost happened) or a specific safety concern during your cruise assignment. Documentation of near misses is important. Make sure to notify the debriefer and describe any incidents, incl. near misses, during the post-cruise process. Thorough documentation of the incident (what, where, when, and any fixes) can provide valuable information for improving safety training and protection for observers.

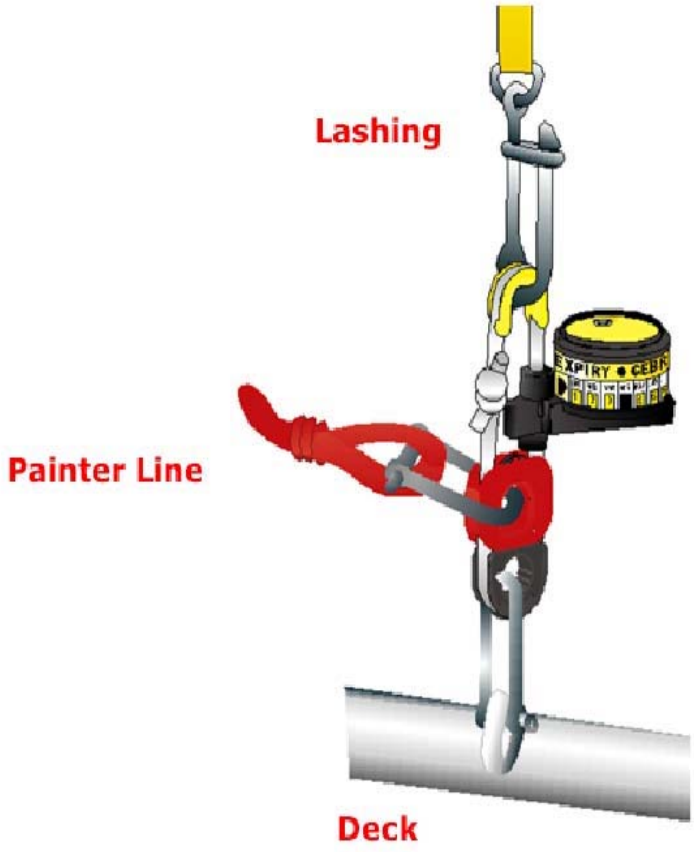
-Observers working in the Hawaii or America Samoa based longline fisheries are required to wear the following safety & protective items:

- **a PFD whenever on deck**
- **a hard hat when observing the gear haul back**
- **boots or other close-toed protective footwear whenever on deck during fishing operations.**

The liferaft should be in a cradle that is mounted to the deck. It should be in an area that is high on deck and is not obstructed so it can float away freely. It should not have any other gear on top of it or be tied down with anything other than the lashing that is attached to the hydrostatic release.



The hydrostatic release needs to be hooked up properly for it to work in an emergency. Make sure that it is in the proper orientation and that it is not out of date.



MANUAL CHANGES

2//21/06 Made changes in chapter 9 regarding recording remoras on the catch log. Added note about measuring fish without forked tails.

01/25/06 Changed frequencies of scan counts during hauling operations in chapter 7.

01/25/2006 Deleted from Chapter 2 (If you incur expenses during transit to or from your vessel, retain receipts. If you encounter any travel delays, contact your contractor or the NMFS Pacific Islands Regional Observer Program Office as soon as possible).

01/25/2006 Deleted from Chapter 3 (Sample Collecting General Comments and Specimen Collection Protocol and also Specimen Numbering System).
Deleted Specimen Tag Examples.

01/25/2006 Added to Chapter 5 (Do not record positions from the captain's logbook. Do not round the time to the nearest 5,10 or 15 minutes.

01/25/2006 Deleted from Chapter 5 (If you observe a protected species get hooked during setting operations, place a check or X in the box.

01/25/2006 Added to Chapter 6 (A form needs to be completed for each day fished, even if nothing changes.

01/25/2006 Added to Chapter 6 (If you are unsure of what the bait type is take a picture).

01/25/2006 Moved from Appendix to Chapter 6 (Diagram of Pelagic Longline Gear and Branchline Diagram).

01/25/2006 Deleted from Chapter 7 page 4 During the setting of the longline, record protected species that are observed injured (hooked or entangled) or killed from this form.

01/25/2006 Moved to before Data Elements section page 6, during longline retrieval paragraph on page 4 along with the Note section.

01/25/2006 Deleted from Chapter 9 (In addition to measuring every third fish, try to measure very large fish paragraph. Deleted Measurement Code, Approximate Length for Billfish and Approximate Length for Sharks and Other Fish.

01/25/2006 Added to Chapter 14 (Refer to current circular updated to see required specimens other than protected species.

01/25/2006 Deleted from Chapter 14, Sample and Data Collection Priorities, Sample Collection General Comments sections.

01/25/2006 Deleted from Chapter 9 (paragraphs on Satellite Phones and Digital Cameras.

01/25/2006 Deleted from Appendices (Longline Hook Style Reference

Date	Changes Made
10/12/2005	Moved "Protocol for Collecting Sea Turtle Skin Biopsies" from Chapter 21 to the end of Chapter 10.
10/12/2005	Moved "Cetacean Skin Biopsy Protocol.from Chapter 21 (including reference for filling out the marine Mammal Life History Form and disentanglement guidelines) to Chapter 12
10/12/2005	Deleted from Chapter 21 " Fish Sampling Protocols"
10/12/2005	Moved" Procedure for Attaching Pop-Up Satellite Tags" to Chapter 10
10/12/2005	Deleted from list in Chapter 21 " Longline hook size reference"
10/12/2005	Deleted from list in Chapter 21 " General Fish Anatomy diagrams"
10/12/2005	Deleted from list in Chapter 21 " Shark sexing diagrams"
10/12/2005	Changed date format on cover page to include day of last changes made
10/12/2005	Added Gear Stuff (helpful tips and advice) to Chapter 21
10/15/2005	Added Satellite phones to Chapter 18
10/15/2005	Added Digital Cameras to Chapter 18
10/15/2005	Added Safety Comes First to Chapter 21
10/15/2005	Added diagrams of liferaft and hooking onto vessel instructions to Chapter 21

THE END